LIFE Effect

What is ETS2?
How does ETS2 work?

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The European Union's Emissions Trading System (EU ETS) is a regulatory market, to support reaching its climate targets by reducing carbon dioxide emissions in a cost effective manner. Not only does ETS2 function through market rules but it has been shaped by policymakers with the purpose of combatting carbon pollution. The EU ETS applies the 'polluter pays' principle, whereby the costs of pollution should be borne by those who cause it. By putting a cost on pollution a financial incentive is created to persuade polluters to minimise their climate impact, and a strong investment signal is sent to those covered by the market to commit to greener choices. A new source of climate finance is established as all ETS revenue is spent on climate action.

The ETS1 started operating in 2005 to cover emissions from heavy industry, electricity and heat generation, and – more recently – a limited amount of emissions from international aviation and maritime transport. The primary legislation setting out the Emissions Trading System's governance and functioning is the EU ETS Directive, which aims to set in motion a carbon market that is 'economically efficient' and 'scientifically necessary to avoid dangerous climate change'.

The ETS has experienced many revisions over the years with the latest update finalised in 2023 as part of the 'Fit for 55' package. As a result of this revision, selected aviation and maritime emissions (inter EU) were added, and an entirely new carbon pricing scheme (ETS2) was created.

ETS2 will enter into effect in 2027 and will apply a price on the carbon content of the fuel combusted in buildings, such as to heat and cool our homes, as well as the fuel used in our road vehicles. The ETS2 will also apply to small industrial installations below 20 megawatts thermal input.

Energy bills already reflect the cost of carbon from fossil fuels used for electricity generation to an extent due to the inclusion of electricity under ETS1. However, with the advent of ETS2, carbon pricing will become more noticeable in the lives of citizens who will have to pay for considerably more of their pollution. Although it is the fuel supplier that is

regulated by ETS2 carbon pricing, citizens will incur the costs passed down from upstream through higher prices at the pump or in energy bills.

As the ETS2 price is applied uniformly across all member states it will have a disproportionate impact on lower income earners who spend a higher proportion of their earnings on energy. Furthermore, in countries without an existing carbon tax, ETS2 will lead to a more notable increase in fuel prices, therefore member states must take into account the potential social impacts of ETS2 to ensure the policy is implemented as fairly as possible to ensure that nobody will be left behind.

This guide will outline that although ETS2 is integral to EU decarbonisation efforts, it is not a silver bullet and additional measures and investments are urgently needed at both EU and member state level to achieve essential emissions reductions. Every additional measure to reduce buildings and road transport emissions will lower the ETS2 price.

Why was ETS2 created?

1. **Put a price on pollution**

Currently, the true cost that fossil fuels have on our society, including the disease and death borne by air pollution or the human and economic cost of increasingly frequent natural disasters is not fully accounted for. Pricing carbon pollution is an important step towards ending Europe's reliance and dependency on imported and price-volatile pollutant energy. Fossil fuels will become gradually more expensive as the ETS2 cap lowers the amount of allowable emissions. The price of renewable energy and clean infrastructure solutions such as heat pumps or zero emission transport options must become relatively more affordable to incentivise people into switching to lower emission options. Even beyond the current cost of living crisis many people will lack the means to fully participate in the energy transition and must be supported to be able to do so.

2. **Combat slow emissions reductions in buildings and road transport**

CO_2 emissions in road transport have been slow to decrease over recent years, and it contributes the largest share of greenhouse gases from the transport sector, accounting for 73.2% in 2022, a share largely unchanged since 1990. Car numbers have risen steadily and growth in both passenger and freight activity continues to drive emissions despite improvements in the energy efficiency of vehicles.

CO_2 emissions in buildings account for 34% of the EU's energy-related emissions. Between 2005 and 2022, emissions fell by a third, and preliminary data for 2023 shows a further slight decline. Yet, measured against the EU's 2040 target of a 92% cut, current policies are set to achieve only a 53% reduction, leaving a significant gap that must be closed.

The ETS2 target is to reduce 42% of emissions in buildings and road transport by 2030 relative to 2005 levels.

3. **Send a strong investment signal**

By installing a price on CO_2, the creation of the ETS2 will positively influence the development of a strong and certain investment signal that will increase the price of pollution as the market matures and fewer pollution permits become available. This will provide industry and people with the information they require to invest in lowering their emissions today as a sensible long-term and cost effective strategy for the future. This investment signal must be accompanied by the removal of all subsidies that facilitate continued use of fossil fuels and to ensure that the price signal remains strong.

4. **Increase pressure for strong complementary policies**

The ETS2 may be an important climate instrument, but to support its impactfulness, it must be paired with strong, complementary policies to lower emissions. Carbon pricing increases the pressure on member states to invest in the complementary policies necessary to lower emissions. Already agreed policies such as the European Performance of Buildings Directive, Minimum Energy Performance Standards, CO_2 standards and the

Energy Efficiency Directive must not be watered down, with their implementation crucial to the success of ETS2. On top of this, member states should go further by investing in additional measures, like greening corporate fleets, accelerating deep housing renovation programmes and encouraging a modal shift away from private car use.

5. **Create funding for climate action**

The ETS2 will be an important source of climate finance. All ETS2 revenue is returned to member states to spend on climate action or socially targeted support under the Social Climate Fund programme. At a price of €55 per tonne of CO_2, revenue can expect to be a value of over €300 billion by 2032.

6. **Break free from fossil fuels**

The ETS2 will create significant pressure to reduce Europe's dependency on foreign imported fossil fuels by making it more expensive, which in turn strengthens the case for domestic renewables, energy efficiency, and greater energy security. Recent energy crises have shown that Europe's reliance on volatile fossil fuel markets has exposed households and businesses to sudden price shocks. Reducing this dependency not only stabilises costs, but also reinforces Europe's sovereignty and resilience in the face of geopolitical risks.

'Cap and trade' and EU Allowances (EUAs)

Upon the commencement of ETS2 in 2027, 75% of the EU's CO_2 emissions will fall under the rules of a 'cap and trade' carbon market. A cap and trade system works by applying a limit or a 'cap' on the level of pollution that can be emitted within a given year based on an overall carbon budget. Relative to the capped total, a number of European Union Allowances (EUAs) are made available to regulated entities (fuel suppliers such as Shell and Engie within ETS2) through auctioning of the EUAs. The fuel suppliers need to purchase EUAs to cover the emissions of the fuels they sell and can save or 'bank' EUAs to use from one year to the next. On 1 January 2025, the ETS2 cap was set for 2027 at 1 036 288 784

EUAs. Of the total amount of EUAs auctioned, 150 million of these are allocated to the SCF up to a maximum value of €65 billion until 2032, which is the capped total amount for this policy. Therefore the total amount of EUAs auctioned for the SCF is not set but is limited by the allowance price.

The number of EUAs available – each individual unit represents the price of one tonne of CO_2 emissions – decreases each year in line with the scheduled emissions reductions, meaning that the level of pollution allowed by the market decreases by a set amount each year. EUAs may be traded on the open market, and either used to achieve that year's target, or banked for future compliance in another year. Under the current legislation, a 42% reduction of emissions in buildings and road transport is foreseen by 2030 compared to 2005 levels, and the number of new EUAs to enter the market each year is projected to reach zero by 2044.

The initial cap value is based on the Effort Sharing target for the EU for the year 2024 and the levels of emissions occurring in ETS2 sectors during 2016 to 2018. 50 million EUAs from ETS1 will be allocated to the SCF to fund it in its initial year before the ETS2 begins, from 2026-2027.

Unlike in ETS1, there will be no free allocation of pollution permits within the ETS2, which means that there is full auctioning of EUAs and all pollution by the market participants must be paid for.

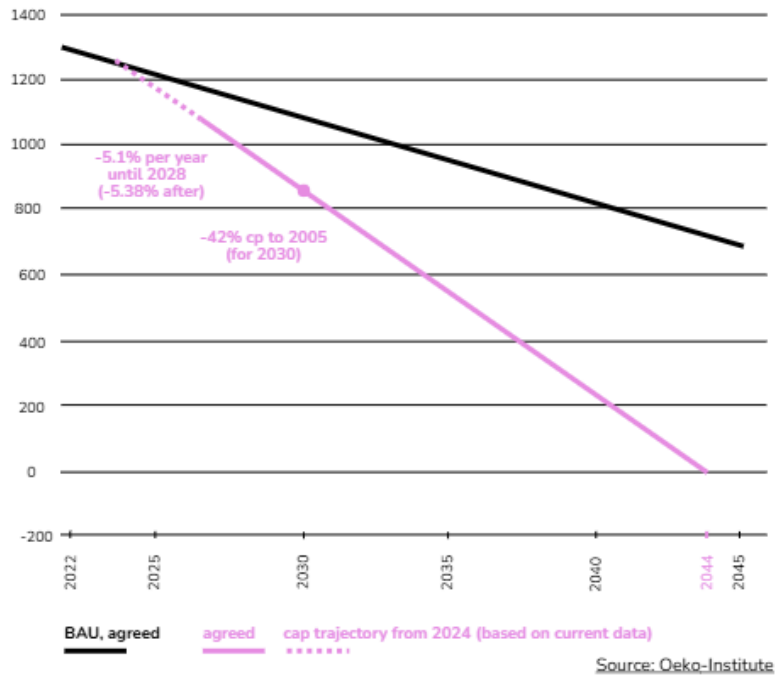
The Linear Reduction Factor

The cap on emissions decreases by a fixed amount each year, which is based on a so-called linear reduction factor (LRF). The LRF is expressed as a percentage of the total cap in the base-year.

There is a direct correlation between the LRF and the level of climate ambition, as a higher LRF will lead to a greater reduction in the number of pollution permits issued each year, ultimately resulting in less CO_2 emitted.

The LRF is initially set at 5.1% of the 2024 cap for 2027 and, when verified emission data is available, the cap is then recalculated for 2028 using 2024-2026 average emission data, with the LRF set at 5.38% onwards. The LRF in ETS2 implies that emissions in covered sectors will have to decrease five times as fast as emissions have reduced between 2005 and 2021, a reduction of 62 Mt CO_2 compared to 11 Mt CO_2.

Figure 4. EU ETS2 cap



Source: Oeko-Institute

The Market Stability Reserve

The ETS1 was plagued with an oversupply of EUAs due to international carbon credits and economic downturn, meaning that supply of emission EUAs consistently outpaced demand leading to prices that were too low to drive decarbonisation, hitting lows below €5 for a tonne of CO_2. As a result, the market stability reserve or MSR was introduced.

The MSR works by removing or adding EUAs into the market when certain thresholds of EUAs in the market are reached. Therefore, the MSR effectively maintains the level of EUAs within the market between quantities deemed conducive for the ETS1 market to drive decarbonisation.

Although a market stability reserve exists within ETS1, it is entirely separate from the MSR in ETS2 or the 'MSR2'. Upon the start of the ETS2 in 2027, 600 million EUAs will be available in the MSR2. It is important to clarify that these EUAs are additional to the ETS2 emissions cap of 1 036 288 784 EUAs. Therefore, the more EUAs that flow from the MSR2 into the market means the more the carbon budget for ETS2 sectors will be exceeded. The legislation stipulates that the MSR2 allowances are valid until the end of 2030 at which point they will be automatically deleted, a provision often referred to as the 'sunset clause'. This is an important step for combating oversupply in later years under high emissions scenarios.

The MSR2 works by responding to changes in the over- or under-supply of EUAs in the market. More specifically:

- If, in a given year, the oversupply exceeds 440 million EUAs in the market, the MSR2 will withhold 100 million EUAs from the market. These are then placed in the MSR2 over a period of 12 months starting on 1 September from the following year.
- If less than 210 million EUAs are in the market, then 100 million additional EUAs from MSR2 will enter the market, or all the available allowances if the MSR2 holds less than 100 million EUAs.

Obligations for regulated entities

Similar to ETS1, regulated entities within ETS2 must follow an annual compliance cycle. As of 1 January 2025, all regulated entities are required to hold a greenhouse gas emissions

permit as well as an approved monitoring plan for how they will monitor and report their emissions annually.

Permit applications must include information about the nature of the business, the types of fuels released for consumption, their end uses, and a monitoring plan describing how emissions will be tracked and reported. Each year, by 30 April, regulated entities must submit an emissions report to account for their emissions in the previous year. From 2026, this data will be checked by an accredited verifier. This requirement is established under the Accreditation and Verification Regulation (AVR), adopted in June 2025.

The AVR defines the standards and procedures for the accreditation of verifiers, the scope and depth of verification activities, and the minimum competence requirements for verification bodies. The role of the verifier is to ensure that submitted emissions data is reliable, credible, and in full compliance with the applicable monitoring plan and regulations. From 2028 onwards, the reporting of annual verified emissions must be accompanied by a surrendering of an equivalent number of EUAs by 31 May that year.

The rules related to the ETS compliance cycle are set out in two regulations:

- **Monitoring and Reporting Regulation (MRR)**

Emissions reports must comply with the MRR, which sets out detailed technical rules on how emissions must be calculated, documented, and submitted. The MRR aims to ensure consistency, transparency, and accuracy across all regulated entities and member states. It also allows for the use of standardised methodologies, default values, and emissions factors to simplify and harmonise reporting obligations.

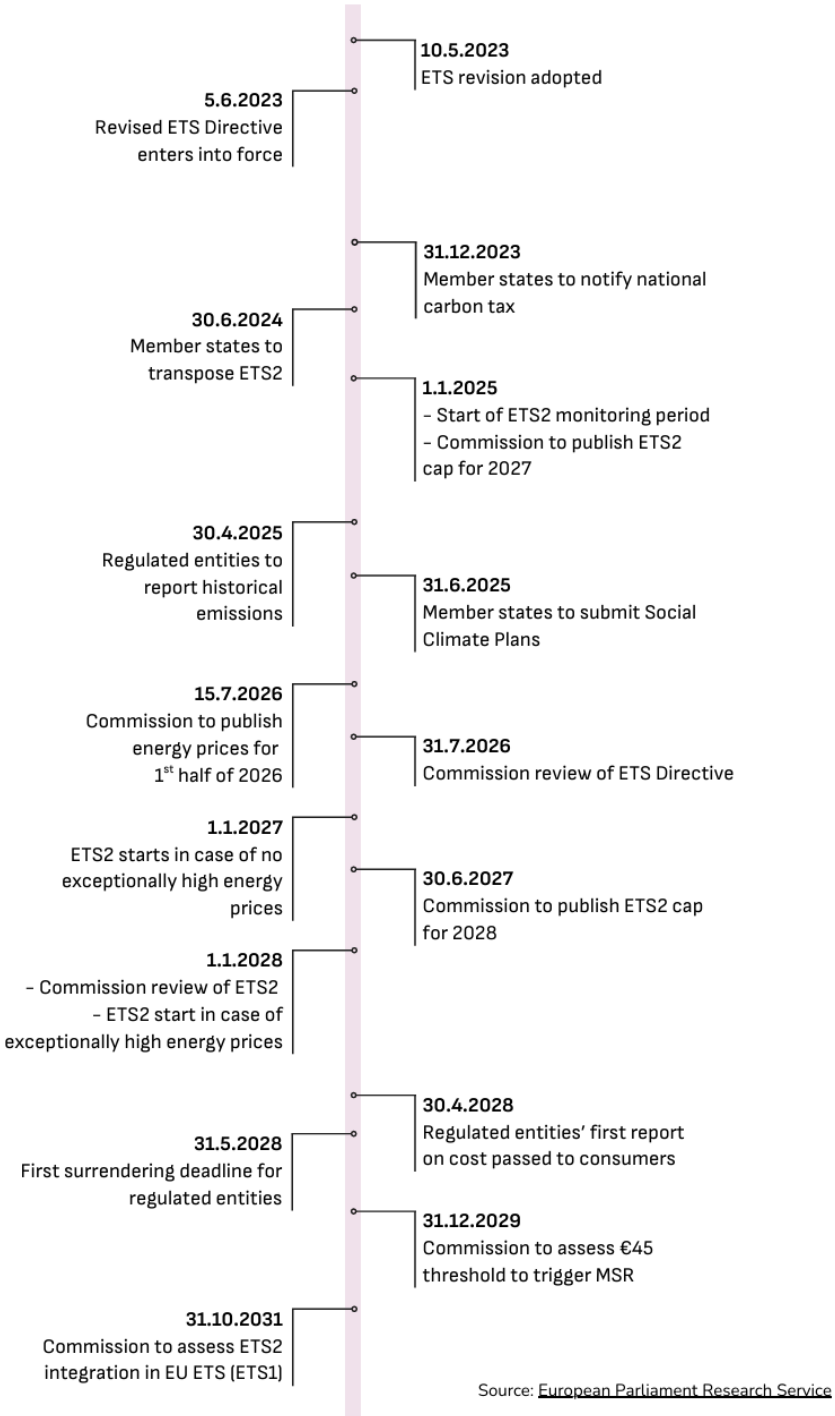
- **Accreditation and Verification Regulation (AVR)**

Fuel suppliers or regulated entities, such as Shell or Total Energies, will have to purchase EUAs with each unit representing one tonne of CO_2. The fuel suppliers will then likely pass this additional cost downstream to consumers in the form of increased energy bills and prices at the pump. Fuel suppliers are obliged to report to the European Commission each

year by 30 April to demonstrate that only the ETS2 price has been passed on to consumers and no windfall profits have been made.

The SCF and the wider ETS2 revenue-flows to member states are directly contingent on the effective operation and implementation of ETS2, as its revenues depend on the auctioning of EUAs within this system. Any delay in national transposition or compliance preparations risks undermining both the financing of climate and social policy and the ability of businesses and consumers to adapt to the new framework.

Timeline of implementation



Source: European Parliament Research Service

Publishing information

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