

Alignment of the EU ETS 1 with the new EU climate target for 2030 and reform of the Market Stability Reserve (MSR 1)

Overview of the revised Emissions Trading Directive

With the 'Fit for 55' package, the EU's energy and climate policy instruments were aligned with the new climate target for 2030 (to reduce emissions by 55 % compared to 1990). One main feature of the Fit for 55 package is the strengthening of the European Emissions Trading System (EU ETS). Following an agreement between Member States, the Commission and the EU Parliament in December 2022, the amendments to the Emissions Trading Directive were published in the Official Journal of the European Union on 16 May 2023.¹²³ This factsheet outlines the key aspects for the existing European Emissions Trading System for stationary (i.e. fixed) installations and aviation (EU ETS 1), which will be extended to include maritime transport from 2024. In addition, changes to the associated Market Stability Reserve (MSR 1) are presented. A separate factsheet has been prepared on the creation of a new emissions trading system, in particular for buildings and road transport (EU ETS 2). Further factsheets provide information on maritime transport, aviation and the Carbon Border Adjustment Mechanism.⁴

The most important elements at a glance

- ▶ The **ambition** of the EU ETS 1 will be significantly increased. The reduction will be increased from the current 43 % to 62 % by 2030 compared to 2005 (incl. air and maritime transport). This target will be achieved by increasing the linear reduction factor (LRF) from 2.2% to 4.3% from 2024 and to 4.4% from 2028. Furthermore, an additional reduction of the cap will be implemented ("rebasing") at two points in time (2024 and 2026). In 2024, the cap will be reduced by 90 million allowances and in 2026 by 27 million allowances (Art. 9 of the European Emissions Trading Directive 2003/87/EU). The articles cited below always refer to the European Emissions Trading Directive 2003/87/EU, unless another legal text is explicitly mentioned.
- ▶ The **scope** of the EU ETS 1 will be extended to include maritime transport. Only in 2026, after the two respective phase-in periods in 2024 and 2025 have ended, will shipping companies be liable to surrender 100 % of their allowances for verified emissions (Art. 3gb).

¹ Directive 2023/959/EC of the European Parliament and of the Council of 10 May 2023 amending Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance trading within the Union and Decision (EU) 2015/1814 concerning the establishment and operation of a market stability reserve for the Union greenhouse gas emission trading system (L 130/134). European Union. Available online at <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32023L0959&qid=1684218852261>, last accessed on 23.08.2023.

² Directive 2023/958/EC of the European Parliament and of the Council of 10 May 2023 amending Directive 2003/87/EC as regards aviation's contribution to the Union's economy-wide emission reduction target and the appropriate implementation of a global market-based measure (L 130/115). European Union. Available online at <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32023L0958&qid=1688466779062>, last accessed on 23.08.2023.

³ Regulation (EU) 2023/435 of the European Parliament and of the Council of 27 February 2023 amending Regulation (EU) 2021/241 as regards REPowerEU chapters in recovery and resilience plans and amending Regulations (EU) No 1303/2013, (EU) 2021/1060 and (EU) 2021/1755, and Directive 2003/87/EC (L 63/1). European Union. Available online <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32023R0435&qid=1688470638062>, last accessed on 23.08.2023.

⁴ See <https://www.umweltbundesamt.de/en/topics/european-emissions-trading-undergoes-comprehensive>.

- ▶ In 2024, the total cap from stationary installations and maritime transport is 1,386 million allowances.⁵
- ▶ The system of **free allocation** for industry remains in place in principle. However, for sectors covered by the new Carbon Border Adjustment Mechanism, the free allocation will be gradually reduced from 2026 to zero in 2034.
- ▶ In **maritime transport**, no free allocation will be granted; rather, there will be full auctioning. **Free allocation to aircraft operators** expires in 2026.
- ▶ The architecture of the **Market Stability Reserve (MSR 1)** generally remains in place. The doubled intake rate of 24 % will be extended beyond 2023 to 2030. Threshold effects in the intake of allowances will be avoided in future. The quantity of allowances in the MSR 1 will be capped at 400 million; and aviation and maritime transport will be included when calculating the quantity in circulation.
- ▶ **The innovation and modernisation funds** will be increased, expanded to include other projects and countries and the rules for awarding the funds will be adapted, with the funding of fossil projects (natural gas) via the modernisation fund linked even more strongly than before to requirements.

⁵ According to the decision of the European Commission of 27.07.2024, available online: https://climate.ec.europa.eu/system/files/2023-07/news_20230728_c_2023_4950_en.pdf, last accessed on 23.08.2023.

1 Key elements of the revised EU ETS 1

1.1 Changed scope of application

The scope of application for stationary installations and aviation remains essentially unchanged. For aviation, the EU ETS 1 will continue to apply only to flights within the European Economic Area (EEA, i.e. EU, Norway, Iceland and Liechtenstein) as well as to Switzerland and to the United Kingdom.⁶ The CORSIA system developed under the International Civil Aviation Organisation (ICAO) will be applied to flights to and from third countries (see also the “Aviation” factsheet).

The scope of the EU ETS 1 is extended to include maritime transport. Emissions from voyages within the EEA and emissions from ships within a port of call are fully covered. 50 % of the emissions from voyages arriving from non-EEA countries or departing from the EEA to third countries must be covered by allowances. The obligation to surrender allowances in this sector will be introduced gradually in 2024 to 2025; and from 2026 shipping companies will be liable to surrender 100 % of their allowances for verified emissions (Art. 3 gb of the European Emissions Trading Directive 2003/87/EU). The articles cited below always refer to the European Emissions Trading Directive 2003/87/EU, unless another legal text is explicitly mentioned.

From 2027 onwards, a separate EU-wide fuel emissions trading system will be introduced which will apply to buildings, road transport and the small installations of the energy sector and industry (see also the “EU ETS 2” factsheet). Initially, there are no plans to link the two emission trading systems.

1.2 Adjustment of the cap

Cap architecture in the EU ETS 1

The available quantity of emission allowances in the EU ETS 1 is limited by the cap, which specifies the required reductions in the sectors covered by the EU ETS 1. There is a cap for stationary installations (which will include maritime transport in future) and a cap for aviation. The course of the cap is determined by a linear reduction factor (LRF), which decreases the cap by a certain quantity of allowances each year⁷. There is an increase in the linear reduction factor (LRF) to 4.3% from 2024 and to 4.4% from 2028 (previously 2.2% p.a.). Furthermore, an additional decrease of the cap by 117 million t is planned for the stationary sector (90 million t in 2024 and 27 million t in 2026).

Emissions from **maritime transport will be** regulated along **with emissions from the stationary sector** under the same cap. As before, the cap for **aviation** is calculated separately. However, the allowances can be freely traded and used between these sectors, which results in a fully integrated carbon market with a (de facto) common cap. The sub-sectors are shown separately here for illustrative purposes only.

The LRF is increased to 4.3% from 2024 and to 4.4% from 2028, which corresponds to a constant annual decrease of the cap by 88 million allowances from 2024 (of which 84 million allowances relate to the **stationary sector** and 4 million allowances to **maritime transport**). Furthermore, a cap decrease is foreseen in the stationary sector; this amounts to 90 million

⁶ Flights from Switzerland and from the UK into the EEA are included by the two countries in their respective emission trading systems.

⁷ For stationary installations, the LRF refers to the mean value of the cap of 2008-2012.

EUAs in 2024 and 27 million EUAs in 2026. These additional reductions will compensate for the non-adjustment of the LRF in 2021 to 2023. As a result, the increase in ambition in the EU ETS 1 in the stationary sector leads to an aggregate reduction in the emission budget in the period 2024 to 2030 of approx. 1.9 billion allowances. The cap in 2030 is reduced by 410 million allowances, creating a significantly lower starting value for the future reduction paths in the EU ETS 1 from 2031 (Table 1).

Table 1: Cap in EU ETS 1, stationary installations and maritime transport

	Cap according to previous directive (without UK)	LRF	Annual cap reduction through LRFs (stationary)	Rebasing	Cap stationary installations (new)	Cap maritime transport	Total cap (new)
	EUAs (millions)	%	EUAs (millions)	EUAs (millions)	EUAs (millions)	EUA (millions)	EUA (millions)
2020	1615	1.74%	34				
2021	1572	2.2%	43				
2022	1529	2.2%	43				
2023	1486	2.2%	43				
2024	1443	4.3%	84	90	1312	75	1386
2025	1400	4.3%	84		1227	71	1298
2026	1357	4.3%	84	27	1116	67	1183
2027	1314	4.3%	84		1032	63	1095
2028	1271	4.4%	86		946	59	1005
2029	1228	4.4%	86		860	55	915
2030	1185	4.4%	86		774	51	825
Total 24-30	9195		594	117	7269	440	7709

Source: Oeko-Institut based on publications of the European Commission⁸⁹

The inclusion of **maritime transport** in the cap for the stationary ETS increases the cap by 78.4 million EUAs in 2024 (approx. 6% of the stationary sector cap in 2024). The same linear reduction factors are applied to the cap increase for **maritime transport** as in the stationary ETS (4.3% up to 2027, 4.4% from 2028). The absolute annual reduction based on these linear reduction factors is determined by calculating 4.3% or 4.4% of the average emissions of maritime transport in 2018-2019 (see Art. 9). Due to the first-time application of the linear

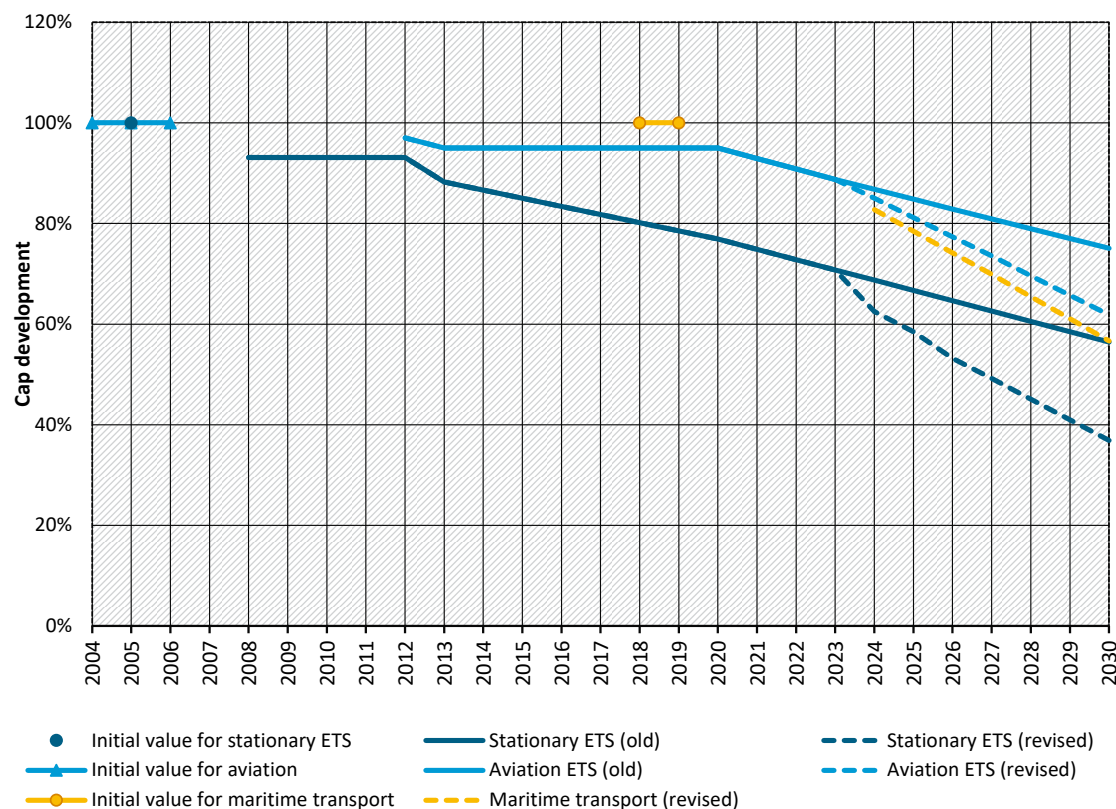
⁸ Commission Decision (EU) 2020/1722 of 16 November 2020 on the Union-wide quantity of allowances to be issued under the EU ETS for 2021. Available online: <https://eur-lex.europa.eu/legal-content/GA/TXT/?uri=CELEX:32020D1722>, last accessed on 23.08.2023.

⁹ As per European Commission decision of 27.07.2023; available online at https://climate.ec.europa.eu/system/files/2023-07/news_20230728_c_2023_4950_en.pdf, last accessed on 23.08.2023.

reduction factor to the cap for maritime transport in 2024, the cap for maritime transport in that year is effectively 74.5 million EUAs.

In contrast to the stationary sector, a one-off reduction of the cap is not planned for **aviation**. Instead, the currently envisaged LRF of 2.2% remains unchanged up to 2023 and will increase after that to 4.3% or 4.4%. Figure 1 shows the effect of the different initial values for the linear reduction factor in the sectors up to 2030.

Figure 1 Cap in the EU ETS 1 at a glance (in % of the respective base year)



Notes: The baselines were calculated back to the cap by applying the linear reduction factor. It was assumed that the LRF for aviation for 2021 to 2023 corresponds to the total allowances issued in 2020 and, from 2024 onwards, to the total allowances issued in 2023.

Source: Oeko-Institut based on the revised EU Emissions Trading Directive.

1.3 Market Stability Reserve (MSR 1)

Supply management in the EU ETS 1

Since 2019, the EU ETS 1 has been expanded to include an element of supply management. It is intended that the Market Stability Reserve (MSR 1), on the one hand, reduces the historical surplus of allowances and, on the other hand, enables the EU ETS 1 to react more flexibly and in a rule-based manner to future supply and demand shocks. Based on the total number of allowances in circulation (TNAC), the MSR 1 removes allowances from the market or distributes allowances by adjusting the auction volumes in subsequent years.

The basic structure of the MSR 1 remains unchanged. In future (from 2024), the definition of the TNAC necessary for the functioning of the MSR 1 will also take into account the allowances of aviation and of maritime transport. As a result, the TNAC will be reduced from 2024 and slightly fewer allowances will be transferred to the MSR 1.

The quantity to be included or distributed is based on the quantity of allowances in circulation. If an upper threshold is exceeded, 24% of the TNAC will continue to be transferred to the MSR 1 (12 % again from 2031); if the quantity falls below the lower threshold, allowances will be distributed. The threshold values (400 million and 833 million allowances) were not adjusted. For TNAC values between 833 and 1 096 million, a new special rule will be applied so that the quantity in circulation is automatically reduced to the upper threshold value of 833 million. This results in the amounts shown in Table 2 as a function of the amount in circulation. The average intake rate falls towards zero as the quantity in circulation approaches 833 million allowances. At the same time, in the transition area between 833 and 1 096 million allowances, the quantity in circulation is automatically reduced to 833 million allowances.

Table 2: Effect of MSR 1 in the transition area of a TNAC between EUA 833 million and EUA 1096 million

TNAC	Intake [EUA m]	Intake in % of TNAC	Marginal intake rate
1250	300	24%	24%
1096	263	24%	100%
1000	167	17%	100%
834	1	0.1%	100%
800	0	0%	0%

Source: Oeko-Institut

The total number of allowances in the MSR 1 will be limited to 400 million allowances in future, instead of being measured against the auction volume as before. This means a reduction of the quantities in the MSR 1. Quantities in excess of the threshold will be cancelled. The first deletion from the MSR 1 took place in January 2023 and amounted to approx. 2.5 billion allowances.¹⁰

¹⁰ EC - European Commission (2023). Publication of the total number of allowances in circulation in 2022 for the purposes of the Market Stability Reserve under the EU Emissions Trading System established by Directive 2003/87/EC, Communication from the commission (2023/C 172/01). European Commission. Available online at [https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52023XC0515\(01\)](https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52023XC0515(01)), last accessed on 23.08.2023.

In the event of a very strong **price increase in the EU ETS 1**, 75 million allowances from the MSR 1 are auctioned (Art. 29a). This situation occurs if, over a 6-month period, the EUA allowance price is higher by a factor of 2.4 than in the 24 months preceding the 6-month period. In light of market developments in recent years, it is regarded as relatively unlikely that the thresholds will be exceeded. The predecessor regulation was also never triggered (as of October 2023).

1.4 Planned allocation of allowances through auctioning and free allocation

Auction revenues in the EU ETS 1

In the period 2021-2030, 57 % of the total available allowances are to be auctioned. Proceeds from the auctioning of allowances are usually available to the auctioning country. 90 % of the total quantity to be auctioned is distributed based on historical emissions of the ETS countries. The remaining 10 % is distributed to lower-income countries. There are certain requirements for the use of the auction revenues; in principle, however, 100 % of them must be used for climate protection and social balance. Furthermore, allowances will be auctioned at the EU level to finance the innovation and modernisation funds and the new Social Climate Fund. For sectors covered by the new Carbon Border Adjustment Mechanism, free allocation will be gradually reduced from 2026 to zero in 2034.

As a rule, all available allowances are to be auctioned in the EU ETS 1. However, in order to avoid carbon leakage, i.e. the relocation of production, investments and the associated emissions abroad, the industries considered to be subject to a significant carbon leakage risk receive for the time being the majority of the required allowances free of charge.

In the period 2021-2030, 57 % of the total available allowances are to be auctioned in principle. However, 3 % of the available allowances will be kept as a buffer for free allocation, which could potentially reduce the auction share to 54 %. This is to avert an across-the-board reduction of free allocation for all installations through a cross-sectoral reduction factor. This reduction factor guarantees that the total amount of free allocation does not exceed the intended share of the cap.

The auction volume is also used to finance European funds:

- The **modernisation fund** will be increased. From 2024, 4.5 % of the total quantity of certificates available will flow into this fund instead of the previous 2 %. The proceeds from the increase will be available to a total of thirteen countries to modernise their energy supply.¹¹ The criteria for excluding the financing of fossil fuels with the fund have been strengthened. Member States can contribute additional allowances to the modernisation fund. These are allowances that were previously allocated free of charge to electricity generation plants (Art. 10c) and redistributed auction quantities (Art. 10 (2) (b)).¹²
- The **innovation fund** serves to support innovative technologies, processes and technologies and has now been opened up for measures in maritime transport and in the buildings and transport sectors (including aviation). The innovation fund will be filled with at least 425 million allowances (instead of the previous 400 million). 345 million allowances are to be made available from the budget for free allocation, 80 million allowances from the auction budget. In the future, the auctions from the innovation fund will be “frontloaded” in order to

¹¹ The new participants are Greece, Portugal and Slovenia.

¹² https://climate.ec.europa.eu/eu-action/funding-climate-action/modernisation-fund_en.

advance projects more quickly. To date, the same annual quantity of allowances from the innovation funds has been auctioned (40 million allowances).¹³. Over time, the innovation fund will be further increased (e.g. allowances from the cap increase of CH₄ and N₂O emissions from maritime transport, quantities that become available via the carbon border adjustment mechanism, a share of the auction quantities from aviation). In future, so-called Carbon Contracts for Difference (CCfD) are also to be used.

- In 2025, 50 million allowances are to be auctioned by the Commission and the proceeds allocated to the **social climate fund** of the EU ETS 2 (Art. 10a (8b)).
- To finance the **REPowerEU programme**, the auctioning of allowances will be brought forward (Art. 10eb). Over a period of approx. three years (up to 31 August 2026), enough allowances are to be auctioned to mobilize a revenue volume of 20 billion Euro. 4 % of these allowances will be taken from the auctioning volumes of the Member States in the period from 01.01.2027 to 31.12.2030. The remainder of the allowances, amounting to 60 % of the total volume, will be taken from the innovation fund.

In the future, there will be **usage requirements for all auction revenues of the Member States**. The directive contains a list of permissible uses for these revenues. For example, they can be used for climate protection measures, electricity price compensation or compensation measures for low-income households. Previously, only 50 % of the auction revenues of the Member States were earmarked for these purposes.

With the introduction of the **Carbon Border Adjustment Mechanism** (CBAM - see also the "Carbon Border Adjustment Mechanism" factsheet), free allocation for the sectors affected by the CBAM will be gradually reduced from 2026 over a period of 9 years and completely abolished by 2034. For this purpose, the free allocation will be multiplied by a CBAM factor. For example, the CBAM factor will be 90 % in 2028 and 51.5 % in 2030). The allowances that are thereby released flow into the innovation fund. Finally, there is a so-called New Entrants Reserve (NER) that makes allowances available for new installations and production increases. It is fed by allowances from the third trading period and from reductions of free allocation.

There will be no free allocation for **maritime transport**. However, there is a phase-in period for maritime transport. This is comparable to free allocation in terms of its effect. For the first reporting year, maritime shipping companies must initially surrender allowances for only 40 % of verified emissions. This share increases to 70 % in 2025 and finally to 100 % from 2026. For 2024 and 2025, a corresponding amount will be deleted from the auction volume for the emissions not compensated by allowances.

In **aviation**, the auction share increases from 15 % of the cap in 2023 to 100 % from the beginning of 2026 (Art. 3d (1)). Up to 20 million allowances deducted from the auction volume are to be allocated free of charge to promote sustainable aviation fuel (Art. 3c (6)). 5 million aviation allowances will go into the innovation fund (Art. 10a (8)).

The **product benchmarks for stationary installations** will be lowered to a greater extent from 2026 than from 2021 to 2025. The lowering of the benchmarks depends on the emission reduction rate in the relevant industrial sector and has been increased from a maximum of 1.6 %

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https://www.eex.com/fileadmin/EEX/Downloads/Trading/Calendar/Auction_Calendar/20220728_EEX_Auction_Calendar_History_2022.zip

per year to 2.5 %. As a result, the benchmarks in the 2026 to 2030 phase can be a maximum of 50 % (20 years * 2.5 %) lower than the benchmarks in the 2013 to 2020 phase.¹⁴ Furthermore, the free allocation is partly (but not for SMEs) linked to the implementation of an energy audit or energy management system measures.

¹⁴ According to Art. 10 (2c), the annual reduction rate is applied to each year between 2008 and 2028. An annual reduction rate of 2.5 % over 20 years thus results in a maximum benchmark reduction of 50 %.

2 Outlook

- ▶ **Cap development:** With the entry into force of the ETS Directive, the cap is fixed until 2030. The linear reduction factor of 4.4 % per year also applies beyond 2030 if not explicitly adjusted by an amendment to the directive. In 2039, a cap of zero would then be reached for the stationary sector, after which emissions could still be covered by allowances that remain unused or those from the MSR 1. According to the European Climate Law, the EU Commission has to submit a proposal for the 2040 target in the first half of 2024, which must then also be implemented by adjusting the cap in the EU ETS 1.
- ▶ **MSR 1:** Following the MSR decision, the MSR 1 is evaluated every five years. The next report is due in 2026. In this context, all relevant parameters of the MSR 1 will be reviewed (e.g. the thresholds of the MSR 1, Art. 3 of the Market Stability Reserve Decision (2015/1814)). The same applies to the limit on the total number of allowances in the MSR 1 (currently 400 million allowances as mentioned above) (Art. 1 (5a) of the Market Stability Reserve Decision (2015/1814)).
- ▶ **Scope:** Over the next few years, the scope of the EU ETS 1 will be gradually expanded as follows:
 - From 2024, flights to and from the outermost regions of the EU will again be subject to a reporting and surrender obligation (Art. 28a (1b)). This only concerns flights that do not connect these regions with the respective mainland (the Member State to whose territory they belong) (Art. 3c (8)).
 - From 01.01.2026, the EU ETS 1 will also cover methane (CH₄) and nitrous oxide (N₂O) emissions from maritime transport (Annex 1). From 01.01.2027, emissions from offshore vessels will also be covered (Art. 9). In order to take these inclusions into account, the cap will be increased in 2026 or 2027 based on the emissions of the most recent year for which data is available (Art. 9).
 - By the end of 2026 at the latest, the Commission shall present a report which considers including emissions from ships with a gross tonnage of between 400 and 5000 (Art. 3gg (5)).
 - For waste incineration, a reporting obligation for CO₂ emissions will be introduced from 01.01.2024 (Annex 1). The EU Commission will present a report which examines the inclusion of waste incineration in the surrender obligation and, in 2026, submit a legislative proposal. The inclusion of emissions from waste incineration will then begin on 01.01.2028 (Art. 30 (7)).
 - Aircraft operators shall report on their non-CO₂ effects from 01.01.2025 (Art. 14 (5)). The Commission shall submit a report by 31.12.2027 which aims to mitigate non-CO₂ effects from aviation by extending the scope of the EU ETS (Art. 14 (5)).
 - By 30.07.2026, the Commission shall submit a report on how and whether negative emissions (e.g. DACCS) should be taken into account in the ETS (Art. 30 (5)).
- ▶ **Linking EU ETS 1 and EU ETS 2:** An integration of both systems will be examined after 2030. Specifically, the Commission shall assess by 31 October 2031 whether an integration of the EU ETS 2 into the EU ETS 1 should be sought (Art. 30i).

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