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I. State of play on the EU ETS – scope and coverage

As explained in the main report, this section relies on the data reported by Italy under Article 21 of the ETS Directive for 2022 as a proxy to make year-to-year comparison possible. For all other countries 2023 data is used.

The EU Emissions Trading System (EU ETS) applies in all 27 EU Member States plus Iceland, Liechtenstein and Norway, as well as to power plants in Northern Ireland[1]. Countries' reports under Article 21 of the ETS Directive (Directive 2003/87/EC)[2] provide an annual overview of the EU ETS implementation. In 2024, countries submitted their reports for 2023.

In 2023, the EU ETS covered emissions from 8 554 installations in the electricity and heat generation and industry sectors, as well as from 379 aircraft operators flying between airports in the European Economic Area (EEA) and on routes from the EEA to Switzerland and to the UK.

Most installations in the EU ETS emit less than 50 000 tonnes CO_2eq (carbon dioxide equivalent) per year (71.4% of the total)[3]. Of these, 4 823 were classified as installations with low emissions[4]. Most of the remaining installations emit between 50 000 and 500 000 tonnes CO_2eq per year[5] (21.4% of the total), and only a fraction emits over 500 000 tonnes CO_2eq per year[6] (7.2% of the total). Figure A shows the breakdown of installations in the EU ETS by the level of emissions in 2023.

Countries reported that 167 installations were excluded from the scope of the EU ETS in 2023. For 111 of these installations, the exclusion resulted from a reduction in their capacity below the 20 MW of thermal input threshold (applicable to combustion installations in Annex I to the ETS Directive). Combustion installations below that threshold are out of the scope of the system.

To reduce the administrative burden, countries can exclude installations with emissions below 25 000 tonnes CO_2eq per year from the EU ETS if alternative measures to reduce emissions are implemented[7]. Since 2021, it is also possible to exclude from the EU ETS installations that

[1] Under the Protocol on Ireland/Northern Ireland of the EU-UK Withdrawal Agreement.

[2] Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a system for greenhouse gas emission allowance trading within the Union and amending Council Directive 96/61/EC (OJ L 275, 25.10.2003)

[3] Category A installations

[4] A subset of category A installations, with emissions below 25 000 tonnes CO2eq per year

[5] Category B installations

[6] Category C installations

[7] Under Article 27 of the ETS Directive. Exclusions are notified every 5 years. An installation that exceeds the threshold in any calendar year is required to be re-entered into the scope of the EU ETS.

emit less than 2 500 tonnes CO_2eq per year[8] if certain conditions have been met, as well as reserve or back-up units that operate no more than 300 hours per year[9].

In 2023, 15 countries opted to exclude installations from the system and apply equivalent measures to reduce emissions. These installations accounted for a total of 4 Mt CO_2eq and 0.3% of installations' total emissions under the EU ETS.

In aviation, most of the 379 regulated operators in 2023 were commercial operators (70% of the total)[10]. A total of 169 operators (45%) qualified as small emitters, including almost all of 115 non-commercial aircraft operators (97%).

In addition to CO_2 emissions, the EU ETS covers emissions of N_2O (nitrous oxide) from nitric, adipic and glyoxylic acids' and glyoxal production and PFCs (perfluorocarbons) from primary aluminium production. In 2023, 22 countries reported permits for ETS activities releasing emissions other than CO_2. Only Norway declared carbon capture and storage activities. Countries reporting emissions other than CO2 from ETS activities are shown in Table A.

[8] Under Article 27a (1) of the ETS Directive. An installation that exceeds the threshold in any calendar year is required to be re-entered into the scope of the EU ETS.

[9] Under Article 27a (3) of the ETS Directive. An installation that exceeds the threshold in any calendar year is required to be re-entered into the scope of the EU ETS.

[10] An example of a commercial aircraft operator is a passenger airline providing services to the public. An example of a non-commercial aircraft operator is a privately owned aircraft.

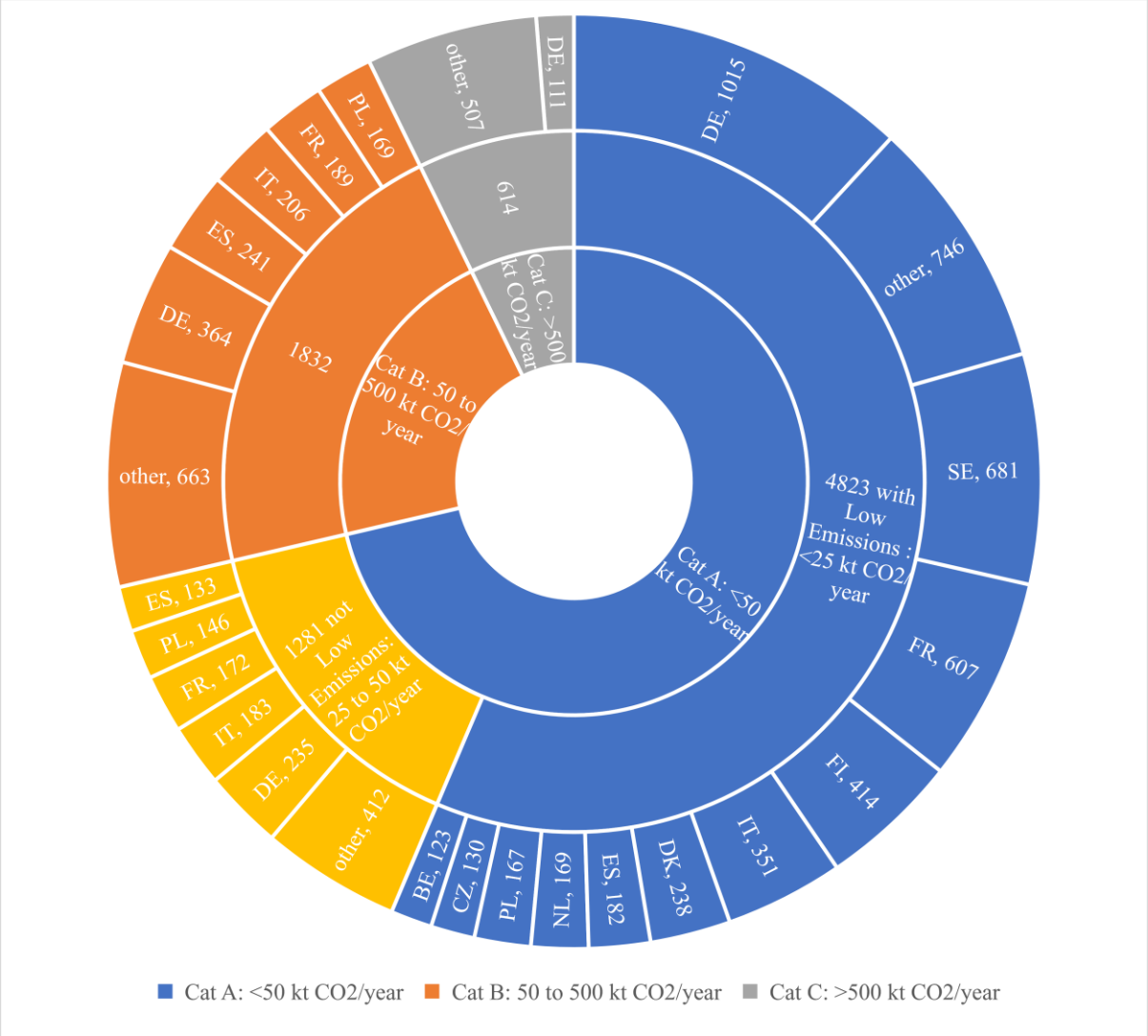


Figure A. Categories of installations in the EU ETS[11]

[11] The figure relies on the data reported by Italy for 2022 as a proxy to make year-to-year comparison possible. For all other countries 2023 data is used.

Table A. Countries reporting emissions other than CO_2 from EU ETS activities (2023)[12]

Gas	Activity	Number of countries	Country
PFCs	Primary aluminium	11	DE, EL, ES, FR, IS, NL, NO, RO, SE, SI, SK
N_2O	Nitric acid	20	AT, BE, BG, CZ, DE, EL, ES, FI, FR, HR, HU, IT, LT, NL, NO, PL, PT, RO, SE, SK
	Adipic acid	3	DE, FR, IT
	Glyoxal and glyoxylic acid	2	DE, FR

[12] The maximum number of countries is 30 because Liechtenstein did not have any active operators in 2023. XI is the country code for Northern Ireland. The table uses the data reported by Italy for 2022 as a proxy to make year-to-year comparison possible. For all other countries 2023 data is used.

II. Balancing supply and demand - contributions to the Market Stability Reserve

Table B. Annual contributions per country to the Market Stability Reserve in allowances (2021-2024)

Country	2021	2022	2023	2024
AT	5 563 187	6 345 090	5 555 134	4 657 247
BE	9 228 856	10 525 966	9 215 496	7 725 979
BG	6 531 499	7 449 497	6 522 044	5 467 874
CY	874 285	997 166	873 019	731 911
CZ	14 108 876	16 091 870	14 088 451	11 811 310
DE	80 029 579	91 277 689	79 913 725	66 997 128
DK	5 005 490	5 709 009	4 998 244	4 190 368
EE	2 225 742	2 538 569	2 222 520	1 863 290
EL	11 888 232	13 559 116	11 871 023	9 952 288
ES	30 610 010	34 912 228	30 565 697	25 625 310
FI	6 682 443	7 621 657	6 672 769	5 594 238
FR	21 881 211	24 956 603	21 849 536	18 317 957
HR	1 513 604	1 726 341	1 511 413	1 267 121
HU	4 381 023	4 996 772	4 374 681	3 667 594
IE	3 740 851	4 266 625	3 735 436	3 131 670
IS	156 001	177 927	155 775	130 598
IT	37 775 362	43 084 666	37 720 676	31 623 817
LI	3 492	3 982	3 486	2 923
LT	1 100 842	1 255 564	1 099 248	921 575
LU	438 053	499 621	437 419	366 718
LV	480 330	547 840	479 635	402 110
MT	332 525	379 262	332 044	278 375

NL	13 394 277	15 276 835	13 374 887	11 213 081
NO	3 106 500	3 543 117	3 102 003	2 600 621
PL	34 583 085	39 443 717	34 533 022	28 951 388
PT	6 072 075	6 925 501	6 063 284	5 083 265
RO	11 604 041	13 234 982	11 587 243	9 714 376
SE	3 246 409	3 702 690	3 241 709	2 717 746
SI	1 478 674	1 686 501	1 476 533	1 237 879
SK	4 206 047	4 797 204	4 199 958	3 521 111
XI (Northern Ireland)	883 013	1 007 119	881 734	739 218

III. Revenue from the EU ETS

Table C. Revenue from the auctioning of general and aviation allowances in the EU ETS (EU 27, 2023)

EU Member State	Revenue in 2023 (million EUR)	
	General allowances	*Aviation allowances*
Austria (AT)	428.4	10.0
Belgium (BE)	739.9	13.6
Bulgaria (BG)	1 167.6	4.5
Cyprus (CY)	110.3	3.3
Czechia (CZ)	771.3	4.8
Germany (DE)	7 582.5	74.1
Denmark (DK)	403.9	12.2
Estonia (EE)	358.8	1.3
Greece (EL)	1 441.8	24.6
Spain (ES)	3 514.0	70.3
Finland (FI)	571.5	10.1
France (FR)	2 060.1	53.2
Croatia (HR)	155.3	3.6
Hungary (HU)	434.9	4.6
Ireland (IE)	149.2	9.1
Italy (IT)	3 547.4	58.0
Lithuania (LT)	111.7	2.1
Luxemburg (LU)	0.0	1.7
Latvia (LV)	88.2	2.6
Malta (MT)	41.8	2.8

Netherlands (NL)	1 261.1	20.2
Poland (PL)	5 406.7	11.8
Portugal (PT)	726.7	18.3
Romania (RO)	571.8	8.8
Sweden (SE)	305.6	17.6
Slovenia (SI)	186.5	0.6
Slovakia (SK)	377.5	0.7

Table D. Revenue from the auctioning of general and aviation allowances (Iceland, Liechtenstein, Norway and the UK for Northern Ireland, 2023)

Country	**Revenue in 2023 (million EUR)**	
	General allowances	*Aviation allowances*
Iceland	0.0	4.3
Liechtenstein	0.3	0.0
Norway	244.1	19.9
UK (Northern Ireland)	78.8	0.0

Table E. Revenue from the auctioning of allowances for the ETS Innovation Fund, the ETS Modernisation Fund and the Recovery and Resilience Facility (2023)

Fund supplied from the EU ETS	**Revenue in 2023 (million EUR)**
Innovation Fund	1 812.0
Modernisation Fund	5 611.4
Recovery and Resilience Facility	2 828.2

IV. EU ETS implementation framework

As explained in the main report, this section relies on the data reported by Italy under Article 21 of the ETS Directive for 2022 as a proxy to make year-to-year comparison possible. For all other countries 2023 data is used.

Table F. Accreditation and verification in the EU ETS (2023)[13]

Aspect	Countries	Number	Number per country
Number of verifiers accredited by the national accreditation body – for installations	23	105	AT(2), BE(2), BG(3), CZ(5), DE(18), DK(3), EE(1), EL(6), ES(6), FI(4), FR(6), HR(3), HU(4), IT(10), LV(2), NL(2), NO(3), PL(8), PT(3), RO(5), SE(3), SI(2), SK(4)
Number of verifiers accredited by the national accreditation body - for aviation	9	20	CZ(1), DE(5), EL(3), ES(2), FR(2), IT(2), LV(1), PT(2), RO(2)
Number of active verifiers that were accredited by another country - for installations	24	56	AT(1), BE(3), BG(3), CY(2), CZ(1), EE(3), EL(1), ES(3), FR(1), HR(1), HU(2), IE(5), IS(2), LT(3), LU(4), MT(1), NL(2), NO(2), PL(3), PT(1), RO(2), SE(7), SK(1), XI(2)
Number of active verifiers that were accredited by another country - for aviation	26	45	AT(3), BE(3), BG(1), CY(2), DE(1), DK(1), EE(2), EL(1), ES(1), FI(1), FR(1), HR(1), HU(1), IE(2), IS(1), IT(2), LT(2), LU(2), MT(3), NL(2), NO(1), PL(3), PT(1), RO(3), SE(3), SK(1)
Number of complaints made about verifiers	3	48	DE(13), DK(15), ES(20)

[13] The maximum number of countries is 30 because Liechtenstein did not have any active operators in 2023. XI is the country code for Northern Ireland. The table uses the data reported by Italy for 2022 as a proxy to make year-to-year comparison possible. For all other countries 2023 data is used.

Number of resolved complaints	3	47	DE(12), DK(15), ES(20)
Number of complaints from prior reports, not reported as resolved earlier and meanwhile resolved	0	0	-
Number of non-conformities for verifiers reported in the information exchange	6	56	AT(2), BG(6), DE(1), FI(21), HR(21), NO(5)
Number of non-conformities above resolved	6	51	AT(2), BG(5), DE(1), FI(17), HR(21), NO(5)
Number of non-conformities from prior reports, not reported as resolved earlier and meanwhile resolved	3	17	AT(2), BG(5), FI(10)
Verifiers suspended	0	0	-
Withdrawal of accreditation certificate	0	0	-
Scope of accreditation reduced	2	2	FI(1), PL(1)

Table G. Coordination between competent authorities that implement the EU ETS (2023) [14]

Aspect	**Number and list of countries**	
A central competent authority regularly reviews monitoring plans, annual emission reports and improvement reports in addition to local and regional authorities.	12	AT, BG, DE, ES, HR, HU, LT, NL, PL, SE, SI, XI
A central competent authority steers local and/or regional competent authorities by giving binding instructions and guidance.	5	BG, FR, NL, SK, XI
A central competent authority steers local and/or regional competent authorities by giving non-binding instructions and guidance.	5	AT, FI, LT, PL, PT
Regular meetings of competent authorities are organised.	10	BE, BG, DE, EL, ES, FR, NL, PT, SE, XI
Common training is organised for all competent authorities to ensure harmonised implementation of requirements.	8	AT, BG, FR, NL, PT, SE, SK, XI
A structured working or coordination group is established, where competent authority staff discuss implementation issues and develop common approaches.	11	BG, EL, ES, FR, HR, HU, NL, PL, PT, SE, XI

[14] The maximum number of countries is 30 because Liechtenstein did not have any active operators in 2023. XI is the country code for Northern Ireland.

Table H. Administrative charges in the EU ETS (2023)[15]

Aspect		Number and list of relevant countries (charges expressed in EUR)	
Installations	Fees charged to operators	15	AT, BG, CZ, DK, ES, FI, HU, IS, IT, NO, PL, PT, RO, SI, XI
	Fees charged for permit issuance/monitoring plan approval	14	AT(100), BG(250), CZ(400), ES(983.35), FI(500), HU(246), IS(4 730), IT(750), NO(1 013), PL(19.23), PT(235.03), RO(360), SI(22.60), XI(8 442)
	Fees charged for permit update	13	AT(100), BG(100), ES(393.33), FI(400), HU(130), IS(830), IT(700), NO(680), PL(2.35), PT(117.52), RO(360), SI(22.60), XI(597)
	Fees charged for permit transfer	8	AT(100), FI(500), HU(130), IS(830), IT(400), PL(2.35), SI(22.60), XI(597)
	Fees charged for permit surrender	3	AT(100), PL(2.35), XI(950)
	Fees charged for an application to the New entrants reserve	8	AT(100), BG(500), HU(705), IS(3 480), PL(2.35), PT(1 645.42), SI(22.60), XI(1 581)
	Annual subsistence charge	3	DK(4 854), IT(300), XI(5 762)

[15] The maximum number of countries is 30 because Liechtenstein did not have any active operators in 2023. XI is the country code for Northern Ireland. The table uses the data reported by Italy for 2022 as a proxy to make year-to-year comparison possible. For all other countries 2023 data is used.

Aircraft operators	Fees charged to aircraft operators	14	AT, BG, DK, FI, HU, IE, IS, IT, LV, NO, PL, PT, RO, SI
	Fees charged for approval of an emissions monitoring plan	13	AT(100), BG(500), FI(770), HU(570), IE(500), IS(4 100), IT(650), LV(374), NO(1 013), PL(2.35), PT(304.37), RO(2 000), SI(22.60)
	Fees charged for approval of a change to an emissions monitoring plan	12	AT(100), BG(50), FI(280), HU(570), IS(1 280), IT(350), LV(200), NO(680), PL(2.35), PT(152.77), RO(500), SI(22.60)
	Fees charged for approval of a monitoring plan for tonne-kilometre data	10	AT(100), BG(500), HU(570), IS(4 100), IT(700), LV(200), PL(2.35), PT(304.37), RO(2 500), SI(22.60)
	Fees charged for approval of a change to a monitoring plan for tonne-kilometre data	9	AT(100), BG(50), HU(570), IS(1 280), LV(200), PL(2.35), PT(152.77), RO(500), SI(22.60)
	Transfer of monitoring plan	4	AT(100), HU(570), IS(1 280), SI(22.60)
	Surrender of monitoring plan	1	AT(100)

Table I. Compliance checks in the EU ETS (2023) [16]

Type of check		Number and list of countries (% or number per country)	
Installations	Share of emissions reports checked for completeness and internal consistency (%)	30	AT(100%), BE(100%), BG(100%), CY(100%), CZ(100%), DE(100%), DK(100%), EE(100%), EL(100%), ES(100%), FI(100%), FR(100%), HR(100%), HU(100%), IE(80%), IS(100%), IT(100%), LT(100%), LU(100%), LV(100%), MT(100%), NL(100%), NO(100%), PL(100%), PT(100%), RO(100%), SE(100%), SI(100%), SK(100%), XI(100%)
	Share of emissions reports checked for consistency with the monitoring plan (%)	30	AT(25%), BE(7%), BG(100%), CY(100%), CZ(45%), DE(100%), DK(100%), EE(100%), EL(100%), ES(90%), FI(100%), FR(100%), HR(100%), HU(100%), IE(80%), IS(100%), IT(30%), LT(80%), LU(100%), LV(100%), MT(100%), NL(20%), NO(100%), PL(100%), PT(100%), RO(100%), SE(5%), SI(100%), SK(100%), XI(100%)
	Share of emissions reports cross-checked with allocation data (%)	25	AT(25%), BE(100%), BG(100%), CY(100%), CZ(30%), DK(100%), EE(100%), EL(100%), ES(46%), FI(100%), FR(100%), HU(100%), IE(100%), IS(100%), IT(30%), LT(80%), LU(100%), LV(100%), NL(20%), PL(100%), PT(100%), RO(100%), SI(100%), SK(100%), XI(100%)
	Share of emissions reports cross-checked with other data (%).	22	AT(100%), BE(100%), BG(100%), CY(100%), CZ(25%), DK(78%), EE(100%), EL(100%), ES(49%), FR(100%), HR(100%), LT(80%), LU(100%), NL(10%), NO(100%), PL(20%), PT(100%), RO(100%), SE(100%), SI(100%), SK(100%), XI(100%)

[16] The maximum number of countries is 30 because Liechtenstein did not have any active operators in 2023. XI is the country code for Northern Ireland. The table uses the data reported by Italy for 2022 as a proxy to make year-to-year comparison possible. For all other countries 2023 data is used.

	Share of emissions reports analysed in detail (%).	25	AT(25%), BE(10%), BG(10%), CY(100%), CZ(45%), DK(72%), EE(100%), EL(50%), ES(18%), FI(100%), FR(30%), HR(100%), IE(80%), IS(100%), LT(100%), LU(100%), MT(100%), NL(25%), NO(100%), PL(100%), PT(100%), RO(100%), SE(5%), SK(100%), XI(100%)
	Number of verified emissions reports rejected due to non-compliance	2	FR(1), RO(1)
	Number of verified emissions reports rejected for other reasons	4	FR(13), LT(6), NO(14), PT(7)
Aircraft operators	Share of emissions reports checked for completeness and internal consistency (%)	25	AT(100%), BE(56%), BG(100%), CY(100%), CZ(100%), DE(100%), DK(100%), EE(100%), ES(100%), FI(100%), FR(100%), HR(100%), IE(100%), IS(100%), IT(100%), LU(100%), MT(100%), NL(100%), NO(100%), PL(100%), PT(100%), RO(100%), SE(100%), SI(100%), SK(100%)
	Share of emissions reports checked for consistency with the monitoring plan (%)	24	AT(100%), BE(56%), BG(100%), CY(100%), CZ(50%), DE(100%), DK(100%), EE(100%), ES(100%), FI(100%), FR(100%), HR(100%), IE(100%), IS(100%), IT(80%), LU(100%), MT(100%), NL(100%), NO(100%), PL(100%), PT(100%), RO(100%), SI(100%), SK(100%)
	Share of emissions reports cross-checked with other data (%)	25	AT(100%), BE(100%), BG(100%), CY(100%), CZ(100%), DE(100%), DK(100%), EE(100%), ES(100%), FI(100%), FR(100%), HR(100%), IE(33%), IS(100%), IT(100%), LT(100%), LU(100%), MT(100%), NL(100%), NO(100%), PT(100%), RO(100%), SE(100%), SI(100%), SK(100%)

	Share of emissions reports analysed in detail (%)	23	AT(100%), BE(11%), BG(100%), CY(100%), CZ(16%), DE(100%), DK(50%), EE(100%), ES(100%), FI(100%), HR(100%), IE(33%), IS(100%), IT(50%), LU(100%), MT(100%), NL(41%), NO(100%), PL(100%), PT(100%), RO(100%), SE(94%), SK(100%)
	Number of verified emissions reports rejected due to non-compliance	2	FR(2), PT(1)
	Number of verified emissions reports rejected for other reasons.	2	FR(2), LT(1)

Table J. Measures to ensure compliance with the EU ETS (2023)

Compliance measures		Countries	
Installations	Onsite inspections	18	AT, BG, CY, CZ, DE, EL, ES, FR, HR, HU, IE, LT, NL, NO, PL, RO, SE, SI
	Preventive measures taken to ensure operator's compliance	17	AT, BG, CZ, DE, DK, EE, ES, FI, FR, HR, HU, LU, NL, NO, PL, SE, SI
	Ensuring that selling of emission allowances is prohibited in case of irregularities	7	AT, BG, CZ, DE, FR, SI, SK
	Imprisonment possible	8	BE, CY, DK, EE, IE, LU, NO, SE
Aircraft operators	Onsite inspections	3	DE, NL, SE
	Preventive measures taken to ensure aircraft operator's compliance	2	AT, DE
	Ensuring that selling of emission allowances is prohibited in case of irregularities	13	AT, CY, DE, DK, EE, FI, FR, HR, IS, LU, NL, NO, SE
	Imprisonment possible	6	CY, DK, IE, LU, NO, SE

Table K. Excess emissions penalties in the EU ETS (2023)[17]

Penalty	Countries	Number of operators and country	
Imposition of excess emission penalties on installations	10	38	CZ(1), DE(1), ES(3), FI(1), HU(9), IT(2), NO(1), PL(4), RO(13), SK(3)
Imposition of excess emission penalties on aircraft operators	4	9	DE(3), ES(4), IT(1), RO(1)

[17] The maximum number of countries is 30 because Liechtenstein did not have any active operators in 2023. XI is the country code for Northern Ireland.

V. Link between the EU ETS and the Swiss ETS

Table L. Comparison of the EU ETS and the Swiss ETS - installations (2023)

System	**EU ETS**	**Swiss ETS**
General allowances auctioned	517 587 000	259 450
Free allocation of general allowances	537 443 682	3 917 667
Verified emissions from stationary installations	1 096 788 327	3 912 485

Table M. Comparison of the EU ETS and the Swiss ETS - aircraft operators (2023)

System	**EU ETS**		**Swiss ETS**	
Aviation allowances auctioned	5 720 500		183 550	
Free allocation of aviation allowances	*EU aviation allowances for EU ETS*	*Swiss aviation allowances for Swiss ETS*	*Swiss aviation allowances for Swiss ETS*	*EU aviation allowances for EU ETS*
	22 078 845	461 708	533 033	379 412
Verified emissions from aircraft operators	*EU ETS*	*Swiss ETS*	*Swiss ETS*	*EU ETS*
	53 416 176	712 360	770 726	861 289