Assessment of EU ETS data trends in relation to the April 2022 update of the EEA EU ETS data viewer

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Contents

1 Background

The EEA's 'EU ETS data viewer' provides, in an easily accessible way, aggregated information on verified emissions, allowances and surrendered units by country, sector and year related to the European Union (EU) emissions trading system (ETS). The ETC/CM supports the EEA in updating this EU ETS data viewer.
Each year in early April, the European Commission publishes data on verified emissions and free allocation for the previous year. This data is based on the EU Transaction Log (EUTL), which records all transactions of permits made under the EU ETS. Since July 2013 the EEA receives a file with EU ETS data directly from the Commission for the use in the data viewer, coving all trading periods. The ETC/CM conducts several checks to ensure consistency of the data. The quality-checked dataset is then uploaded by the EEA on its website and can be viewed through its EU ETS data viewer.
This report presents preliminary results up to the year 2021, based on the dataset published by the Commission on April 1, 2022. These results are based on the data analysis performed by the ETC/CM on the full database (the 'disaggregated database'), which includes ETS information at installation level and is used to update the EU ETS data viewer.

2 First analysis of verified emissions in 2021

With the first EUTL extract on April 1, 2022, total verified emissions (VE) 2021 summed up to 1,237 Mt CO_2-eq for stationary installations, compared to 1,253 Mt CO_2-eq of the year 2020. This difference is equivalent to a decrease of 1.2% (see Table 2.1). However, the data on verified emissions in 2021 is incomplete, as not all installation operators report their emissions by that date.
If the emission trend is calculated only for those installations which already reported VE 2021 and have also reported VE in 2020, an emission **increase of 9.1%** can be observed (see also Table 2.1).

In the next step, to make the sum of emission 2021 more complete, emissions of installations are identified, for which currently no information is available on emissions of 2021. For this analysis on completeness, verified emissions 2020 have been summed up for all those accounts that are active in the third trading period and for which no verified emissions 2021 have been reported to date (see Table 2.2, if the percentage given in column 3 is high, a lot of verified emissions have not been reported yet). This sum amounts to 138,4 Mt CO_2-eq (11% of verified emissions 2020).
It is expected that the information on 2021 verified emissions will become increasingly complete in the weeks following this initial publication of data, which will make it easier to derive conclusions on emission trends. However, even at this stage, an estimation of the total amount of verified emissions in 2021 can be derived. For the estimation of the total amount, the following volumes have been added up:

- Total actual reported VE 2021
- Sum of missing VE 2020, assuming that all installations for which the account is active in the third trading period and which reported VE 2020 will report emissions again for 2021. Usually, it is assumed that these emissions will remain at a similar level.

Following this procedure, an amount of 1,368 Mt CO_2-eq VE is estimated for 2021, which means an increase by 9.1 % compared to 2020 VE. It has to be noted, that it is a conservative assumption, that all missing emissions would be at the level of emissions 2020. To account for the potential impact from the special situations in 2020 and 2021, the average increase per country of facilities reporting for 2020 and 2021 was applied to the expected missing VE. With this assumption, total VE 2021 amounts to **1,373 Mt CO_2-eq, an increase of 9.6 %** (see Table 2.2).

Emissions from operators of installations which entered the system in 2021 and did not report VE 2021 yet, could not been considered for this estimate. Experience of the last years shows that the absolute amounts of emissions from these new installations are not high. So this does not change the complete picture.

Table 2.1 First analysis of verified emissions as reported April 1, 2022

	VE 2020	VE 2021	Emission trend 20->21 as in database	Emission trend 20-> 21 corrected (for entities with VE 2021 **AND** 2020>0)
	tCO2eq			
Total	**1,252,993,258**	**1,237,463,158**	**-1.2%**	**9.1%**
AT	27,013,522	28,703,348	6.3%	6.8%
BE	41,511,577	36,490,177	-12.1%	-0.4%
BG	23,845,295	1,327,083	-94.4%	0.6%
CY	4,294,888	4,314,996	0.5%	0.5%
CZ	54,675,715	57,858,167	5.8%	11.7%
DE	320,278,260	354,634,199	10.7%	11.0%
DK	10,832,430	10,746,468	-0.8%	8.0%
EE	5,617,417	6,850,057	21.9%	22.7%
ES	89,038,684	91,703,953	3.0%	6.8%
FI	19,575,936	20,308,592	3.7%	4.0%
FR	82,135,182	73,638,299	-10.3%	9.2%
GB*	-	-	n.a.	n.a.
GR	31,728,304	31,955,180	0.7%	7.8%
HR	7,323,810	6,150,322	-16.0%	-5.4%
HU	18,907,881	17,591,010	-7.0%	-6.8%
IE	13,296,424	15,283,892	14.9%	22.2%
IS	1,780,064	1,843,588	3.6%	3.6%
IT	126,035,442	130,922,251	3.9%	5.7%
LI	600	-	-100.0%	
LT	6,137,662	5,976,002	-2.6%	-2.6%
LU	1,376,500	1,317,495	-4.3%	-1.2%
LV	2,021,990	1,903,236	-5.9%	1.6%
MT	810,207	771,044	-4.8%	-4.2%
NL	74,113,716	73,954,886	-0.2%	20.9%
NO	23,729,164	22,920,837	-3.4%	-3.0%
PL	171,729,419	145,323,683	-15.4%	15.1%
PT	18,733,777	16,027,726	-14.4%	-5.0%
RO	32,665,999	32,302,679	-1.1%	-0.5%
SE	16,705,579	18,436,571	10.4%	10.7%
SI	6,095,593	5,681,501	-6.8%	-5.9%
SK	18,169,997	20,797,487	14.5%	15.3%
XI	2,812,224	1,728,429	-38.5%	6.8%

Note:

*GB Emissions from 2020 were not counted in this analysis as GB entities are not part of EU-ETS from 2021

Last column shows emission trends for those installations that reported verified emissions for both 2020 and 2021.

Source: EUTL extract April 1, 2022, own calculation

Table 2.2 Completeness and VE 2021 estimate (trend corrected)

	VE 2021 missing in absolute terms		VE 2021 estimate	
	tCO2eq	Share of VE 2021 (%)	tCO2eq	Difference to VE 2020 (%)
Total	**138,402,023**	**11.0%**	**1,372,862,042**	**9.6%**
AT	152,976	0.6%	28,856,324	6.8%
BE	12,072,441	29.1%	48,562,618	17.0%
BG	22,664,630	95.0%	23,991,713	0.6%
CY	-	0.0%	4,314,996	0.5%
CZ	3,204,016	5.9%	61,062,183	11.7%
DE	1,062,606	0.3%	355,696,805	11.1%
DK	966,193	8.9%	11,712,661	8.1%
EE	45,190	0.8%	6,895,247	22.7%
ES	3,524,047	4.0%	95,228,000	7.0%
FI	63,139	0.3%	20,371,731	4.1%
FR	16,112,024	19.6%	89,750,323	9.3%
GB	-		-	
GR	2,243,218	7.1%	34,198,398	7.8%
HR	795,224	10.9%	6,945,546	-5.2%
HU	43,261	0.2%	17,634,271	-6.7%
IE	961,556	7.2%	16,245,448	22.2%
IS	403	0.0%	1,843,991	3.6%
IT	2,463,963	2.0%	133,386,214	5.8%
LI	600	100.0%	600	0.0%
LT	3,043	0.0%	5,979,045	-2.6%
LU	41,951	3.0%	1,359,446	-1.2%
LV	150,916	7.5%	2,054,152	1.6%
MT	4,843	0.6%	775,887	-4.2%
NL	15,688,201	21.2%	89,643,087	21.0%
NO	118,817	0.5%	23,039,654	-2.9%
PL	52,382,887	30.5%	197,706,570	15.1%
PT	1,772,783	9.5%	17,800,509	-5.0%
RO	234,847	0.7%	32,537,526	-0.4%
SE	139,772	0.8%	18,576,343	11.2%
SI	55,311	0.9%	5,736,812	-5.9%
SK	158,455	0.9%	20,955,942	15.3%
XI	1,274,709	45.3%	3,003,138	6.8%

Note: The last two columns rely on an estimate of 2021 emissions, where emissions of all operators that have not reported for 2021 and still are active in the third trading period, are estimated based on the average increase per country.

Source: EUTL extract April 1, 2022, own calculation