

# Final Review Report

## 2022 annual review of national greenhouse gas inventory data

pursuant to Article 19(2) of Regulation (EU) No 525/2013

Luxembourg  
20 April 2022

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## Conclusions from step 1 of the 2022 annual ESD review

This Final Review Report presents the findings from the first step of the 2022 annual review of the greenhouse gas (GHG) emission inventory of Luxembourg, pursuant to Article 19(2) of Regulation (EU) No 525/2013.

The EU inventory team (European Environment Agency (EEA), European Topic Centre on Climate Change Mitigation (ETC/CM), Joint Research Centre (JRC), Eurostat) performed the checks pursuant to Article 29 of Commission Implementing Regulation (EU) 749/2014 in order to verify the transparency, accuracy, consistency, comparability and completeness of the national GHG inventory for the year 2020 submitted in 2022 by Luxembourg pursuant to Articles 7(1) and 7(3) of Regulation (EU) No 525/2013, as part of the annual review referred to in Article 19(2) of Regulation (EU) No 525/2013.

The checks performed did not identify any significant issues, therefore Luxembourg is not subject to a second step of the 2022 annual ESD review. As no revised estimates or technical corrections were deemed necessary, the GHG emissions data officially reported by Luxembourg by 15 March 2022 under the Monitoring Mechanism Regulation can form the basis for determination of ESD emissions (see Table 1 and Table 2).

More information on the ESD legislation and the procedures of the 2022 annual ESD review is presented in the annexes of this Final Review Report.

## National totals

**Table 1: National totals**

Data / Source category	Reference	Emission estimates (kt CO <sub>2</sub> equivalent) <sup>1</sup>
		2020
Total greenhouse gas emissions, including indirect CO <sub>2</sub> , without land use, land-use change and forestry as reported by Luxembourg pursuant to Article 7(3) of Regulation (EU) No 525/2013.	LUX_2022_1_10032022	9 064.837
Total greenhouse gas emissions submitted by Luxembourg		9 064.837
CO <sub>2</sub> emissions from 1A3a Domestic aviation	LUX_2022_1_10032022	0.494
NF <sub>3</sub> emissions	LUX_2022_1_10032022	-

(<sup>1</sup>) The tables presented in this report show numbers rounded to three decimal places, although most numbers are available with greater precision. For all calculations (in particular of total GHG emissions and total ESD emissions), all available decimal places were used. Therefore, the totals shown may slightly differ from calculation results where only three decimals would be taken into account.

## Greenhouse gas emissions covered by Decision 406/2009/EC

**Table 2: Greenhouse gas emissions covered by Decision 406/2009/EC**

Data	Reference	Emissions (kt CO <sub>2</sub> equivalent) <sup>1</sup>
		2020
Total greenhouse gas emissions submitted by Luxembourg	<i>See Table 1 above</i>	9 064.837
Total verified emissions from stationary installations under Directive 2003/87/EC	Extracted by the European Commission from EUTL on 8 March 2022 <sup>2</sup>	1 376.500
CO <sub>2</sub> emissions from 1A3a Domestic aviation	<i>See Table 1 above</i>	0.494
NF <sub>3</sub> emissions	<i>See Table 1 above</i>	-
<b>Total ESD emissions</b>		<b>7 687.843</b>

(<sup>1</sup>) The tables presented in this report show numbers rounded to three decimal places, although most numbers are available with greater precision. For all calculations (in particular of total GHG emissions and total ESD emissions), all available decimal places were used. Therefore, the totals shown may slightly differ from calculation results where only three decimals would be taken into account.

(<sup>2</sup>) The emissions of ETS stationary installations were independently verified and recorded in the EU Transaction Log (EUTL).

## Detailed results of step 1 of the 2022 annual ESD review

The EU inventory team (EEA, ETC/CM, JRC, Eurostat) carried out the checks to be performed during the first step of the 2022 annual ESD review as described in Annex II.

Table 3 provides an overview of the number of issues raised during step 1. No unresolved issues have been forwarded to step 2.

**Table 3: Overview of issues raised during step 1 of the 2022 annual ESD review**

IPCC Sector	Issues raised during step 1	Issue(s) subject to step 2
Energy	3	-
Industrial processes and product use	2	-
Agriculture	5	-
LULUCF (including KP)	3	-
Waste	5	-
Cross-cutting	-	-
<b>Total number of observations</b>	<b>18</b>	<b>-</b>

## Annex I: Legal background and procedures of the 2022 annual ESD review

The Effort Sharing Decision No 406/2009/EC (ESD) sets national emission limits for greenhouse gas (GHG) emissions in the sectors outside the EU's Emission Trading System (ETS) for the period 2013-2020. The ESD and the Monitoring Mechanism Regulation (EU) 525/2013 (MMR) lay down annual reporting obligations, compliance checks and a Union review process to ensure that the compliance with annual GHG emission limits is assessed in a credible, consistent, transparent and timely manner. The requirements for the Union review of the national inventory data submitted by Member States are set out in Article 19 of the MMR.

The details concerning the review process, such as the timing and steps of conducting the annual and comprehensive reviews are set out in Chapter III and Annex XVI of the Commission Implementing Regulation (EU) No 749/2014.

The objectives of the 2022 annual ESD review of Member States' GHG emission inventories are:

- a) to support the European Commission by ensuring it has accurate, reliable and verified information on annual GHG emissions for determining compliance with ESD targets for the year 2020 in a credible, consistent, transparent and timely manner, according to Article 19 (2) of the MMR;
- b) to assist Member States in improving the quality of their GHG inventories.

The 2022 annual ESD review of national GHG inventory data is carried out for the compliance year 2020 pursuant to Article 19 of the MMR. The EEA review secretariat (consisting of Melanie Sporer, Claire Qoul and Justine Raoult) coordinates the 2022 annual ESD review as foreseen in Article 28 of the Commission Implementing Regulation (EU) No 749/2014.

The scope of the 2022 annual ESD review is presented in Table 4 and consists of 2 steps. Step 1 was combined with the 'EU QA/QC procedures' (i.e. initial checks) and was carried out by the EU inventory team (EEA, ETC/CM, JRC, Eurostat). The EU inventory team consisted of the following experts:

- ETC/CM task manager: Nicole Mandl, Marion Pinterits (ETC/CM)
- Energy: Julien Vincent, Coralie Jeannot, Marion Pinterits, Zuzana Roskova, Bernd Gugele, Markéta Klusackova, Maria Georgakaki (ETC/CM), Michael Goll (Eurostat)
- IPPU: Barbara Gschrey, Kristina Kaar, Lorenz Moosmann, Lukas Emele, Julien Vincent, Coralie Jeannot (ETC/CM)
- Agriculture: Frank Dentener, Simona Bosco, Efisio Solazzo (JRC)
- Waste: Céline Gueguen (ETC/CM)
- LULUCF: Raul Abad-Vinas (JRC)
- Quality coordinators: Frank Dentener, Giacomo Grassi (JRC), Nicole Mandl, Marion Pinterits, Markéta Klusackova, Risto Saarikivi, Maria Purzner, Julien Vincent, Giorgos Mellios, Ils Moorkens, Zuzana Roskova (ETC/CM)
- Cross-cutting: Nicole Mandl (ETC/CM)

All findings from the initial checks that were relevant for the ESD and that were not resolved within the initial check phase will be followed up in the second step of the annual review. More information on the ESD legislation and the procedures of the 2022 annual ESD review is presented in the following section of this Final Review Report. The checks carried out during the first step of the 2022 annual ESD review are presented in Annex II.

**Table 4: Scope of the 2022 annual ESD review**

Element	Scope	Further information
Countries	EU geographical coverage of the 27 Member States and the United Kingdom	
Years	2020	
Gases	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O, HFCs, PFCs, SF <sub>6</sub>	NF <sub>3</sub> is not covered by the ESD
Sectors	All emission source sectors excluding LULUCF	National totals exclude emissions from LULUCF and emissions reported under memo items
Indirect CO <sub>2</sub> emissions	Included in national total	
Inventory Submission	Submissions received by 15 March 2022	



## Annex II: Checks carried out during the 2022 annual ESD review in line with Art. 29 of the Commission Implementing Regulation (EU) No 749/2014

**As part of the EU's effort to assist Member States in improving the quality of the GHG inventories, the checks to verify the transparency, consistency, comparability and completeness of the greenhouse gas inventory included:**

### **First step review checks:**

1. Assessment whether all emission source categories and gases required under Regulation (EU) No 525/2013 are reported;
2. Assessment whether emissions data time series are consistent;
3. Assessment whether implied emission factors across Member States are comparable taking the IPCC default emission factors for different national circumstances into account;
4. Assessment of the use of 'Not Estimated' notation keys where IPCC tier 1 methodologies exist and where the use of the notation key is not justified in accordance with paragraph 37 of the UNFCCC reporting guidelines on annual greenhouse gas inventories as included in Annex I to Decision 24/CP.19;
5. Analysis of recalculations performed for the inventory submission, in particular if the recalculations are based on methodological changes;
6. Comparison of the verified emissions reported under the Union's Emissions Trading System with the greenhouse gas emissions reported pursuant to Article 7 of Regulation (EU) No 525/2013 with a view of identifying areas where the emission data and trends as submitted by the Member State under review deviate considerably from those of other Member States;
7. Comparison of the results of Eurostat's reference approach with the Member States' reference approach;
8. Comparison of the results of Eurostat's sectoral approach with the Member States' sectoral approach;
9. Assessment whether recommendations from earlier Union or UNFCCC reviews, not implemented by the Member State could lead to a technical correction;
10. Assessment whether there are potential overestimations or underestimations relating to a key category in a Member State's inventory.