

# Final Review Report

## 2017 annual review of national greenhouse gas inventory data

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

### Estonia

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European Environment Agency



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## Conclusions from the 2017 annual ESD review

This Final Review Report presents the findings from the 2017 annual review of the GHG emission inventory of Estonia, pursuant to Article 19(2) of Regulation (EU) No 525/2013, with a view to monitoring Estonia's achievement of its greenhouse gas emission reduction or limitation target pursuant to Article 3 of Decision No 406/2009/EC (the 'Effort Sharing Decision', ESD) in 2015.

The reviewers carried out checks to verify the transparency, accuracy, consistency, comparability and completeness of the national greenhouse gas inventory for the year 2015 submitted in 2017 by Estonia pursuant to Article 7(3) of Regulation (EU) No 525/2013.

The review consisted in two steps:

1. The EU inventory team (European Environment Agency (EEA), European Topic Centre on Air Pollution and Climate Change Mitigation (ETC/ACM), Joint Research Centre (JRC) and Eurostat performed the initial checks under Step 1.
2. A Technical Expert Review Team (TERT) performed Step 2 of the 2017 annual ESD review.

More information on the Effort Sharing Decision and the procedures for the 2017 annual ESD review is presented in the annexes to this review report.

### Step 1 conclusions

The EU inventory team identified, through the checks performed in Step 1, one significant issue. Therefore, Estonia was subject to a second step of the 2017 annual ESD review. It should be noted that Estonia volunteered to be subject to a second step of the 2017 annual ESD review in accordance with Article 32(2) of Commission Implementation Regulation (EU) No 749/2014. Therefore, the second step review checks went beyond the significant issue identified in the first step.

### Step 2 conclusions

1. The reviewers raised 22 issues with Estonia during the first and the second step of the review 2017 (see Table 1). The TERT provided recommendations for four of these issues. Other issues raised during the annual review were clarified and are considered resolved.
2. The TERT identified cases where inventory data were prepared in a manner which is inconsistent with UNFCCC guidance documentation or Union rules. The TERT did not identify any underestimates or overestimates exceeding the threshold of significance pursuant to Article 31 of Commission Implementing Regulation (EU) No 749/2014.
3. On that basis, the TERT did not deem necessary any technical corrections in the meaning of Article 19(3)(c) of Regulation (EU) No 525/2013 in consultation with Estonia.
4. The TERT identified non-binding recommendations in order to improve the national inventory data of Estonia (see Table 4).
5. The TERT considers that it received a response from Estonia that was sufficient in order to undertake the annual review appropriately.

**Table 1: Issues raised with Estonia during the first and the second step**

	Issues raised	Recommendations	Revised estimates <sup>1</sup>	Technical corrections <sup>2</sup>
<b>Total</b>	<b>22</b>	<b>4</b>	<b>-</b>	<b>-</b>
Energy	4	1	-	-
IPPU	1	-	-	-
Agriculture	10	1	-	-
Waste	7	2	-	-
Cross-cutting	-	-	-	-

<sup>1</sup> Revised estimates: changes in inventory estimates triggered by the review and provided by the Member State.

<sup>2</sup> Technical corrections: changes in inventory estimates triggered by the review and provided by the TERT.

## National totals

**Table 2: National totals**

Data / Source category	Reference	Emission estimates (kt CO <sub>2</sub> equivalent) <sup>1</sup>
		2015
Total greenhouse gas emissions, including indirect CO <sub>2</sub> , without land use, land-use change and forestry as reported by Estonia pursuant to Article 7(3) of Regulation (EU) No 525/2013.	EST_2017_14032017	18 040.485
<b>Total greenhouse gas emissions</b>		<b>18 040.485</b>
CO <sub>2</sub> emissions from 1.A.3.a Domestic aviation	EST_2017_14032017	1.243
NF <sub>3</sub> emissions	EST_2017_14032017	-

<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 3: Greenhouse gas emissions covered by Decision 406/2009/EC**

Data	Reference	Emissions (kt CO <sub>2</sub> equivalent) <sup>1</sup>
		2015
Total greenhouse gas emissions	<i>See Table 2 above</i>	18 040.485
Total verified emissions from stationary installations under Directive 2003/87/EC	Extracted by the European Commission from EUTL on 8 March 2017 (as agreed at the Working Group I of the Climate Change Committee on 18 May 2015) <sup>2</sup>	11 894.830
CO <sub>2</sub> emissions from 1.A.3.a Domestic aviation	<i>See Table 2 above</i>	1.243
NF <sub>3</sub> emissions	<i>See Table 2 above</i>	-
Total ESD emissions		6 144.411

<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). These emissions do not derive from the national greenhouse gas emission inventory data and therefore the TERT was not tasked to review them.

## Statement from Estonia on the conclusions presented by the TERT

Estonia agrees with the aggregated GHG emission inventory estimates presented in Table 2.

## Recommendations from the TERT, considering revised estimates and technical corrections deemed necessary by the TERT

**Table 4: Recommendations from the TERT**

EMRT - ID	Key category	Category, gas, year	Conclusion step 2 note	Revised estimate	Technical correction
EE-1A1c-2017-0001	Yes	1.A.1.c Manufacture of solid fuels and other energy industries, CO <sub>2</sub> , 2015	For category 1.A.1.c Manufacture of solid fuels and other energy industries and CO <sub>2</sub> emissions, the TERT noted that in reference to issue EE-1A1c-2015-0002 Estonia still reports NO for source category 1.A.1.c liquid and gaseous fuels although IE was recommended in previous review. In response to a question raised during the review, the Member State explained that the difference between the CRF sectoral approach and Eurostat data is due to the difference of methodology used by Statistics Estonia. Because of this, 1.A.1.c liquid fuels is included in the category 1A1a. The Member State stated that the recommended use of the IE notation key will be implemented in the 2018 submission. The TERT agreed with the explanation and reiterates the recommendation to report IE for source category 1.A.1.c liquid and gaseous fuels in its next submission.	No	No
EE-3D-2017-0001	Yes	3.D Agricultural soils, N <sub>2</sub> O, 2015	For category 3.D.a.2.a Direct N <sub>2</sub> O Emissions from Managed Soils/ Animal Manure Applied to Soils and for N <sub>2</sub> O emissions and the year 2015 the TERT noted that there is a lack of transparency, because the total N excreted (pasture range and paddock manure excluded) minus the N loss through volatilisation and leaching and run-off presented in CRF Table 3.B(b) is not equal to the Animal Manure Applied to Soils in CRF Table 3.D. The TERT noted that the discrepancy is not large, but that the values should be equal. In response to a question raised during the review, Estonia explained that the reason for the discrepancy is in the CRF Table 3.D, where incorrect nitrogen values for animal manure applied to soils have been inserted. The difference in emissions due to the incorrect values is below the threshold of significance. The TERT agreed with the information provided by Estonia, and recommends that Estonia ensures that the N excretion values reported in Table 3.B(b) and Table 3.D for Animal manure applied to soils are consistent in the next inventory submission.	No	No
EE-5A-2017-0002	No	5.A Solid waste disposal, CH <sub>4</sub> , 2004-2015	For category 5.A Solid Waste Disposal, CO <sub>2</sub> emissions for the years 2004-2015, the TERT noted in the NIR that there were recalculations of the activity data for solid waste disposal categories. The TERT noted that this issue does not relate to an over- or underestimate and recommends Estonia to include in the NIR an overview of the amounts of waste generated and the waste amounts per treatment option to enhance the transparency of the NIR.	No	No
EE-5D-2017-0001	No	5.D Wastewater treatment and discharge, CO <sub>2</sub> , 2015	For the category 5.D.1 Domestic Wastewater and CO <sub>2</sub> emissions and for the years 1990-2015, the TERT noted that, referring to previous observations EE-5D-2015-0005 and EE-5D-2016-0001, Table 7.32 in NIR (p.408) does not yet include the MCF (methane correction factor) of zero for the centralized aerobic waste water treatment plants. This would however improve the transparency of the description of the emission estimates. On the other hand Estonia did not delete the factor "I" (correction factor for additional industrial BOD discharged into sewers) in equation 7.16 in the	No	No



			<p>NIR (p.407), although Estonia provided information to the previous review teams that factor I in the equation is not applied for the following treatment methods: latrines, septic systems and anaerobic shallow lagoons. The TERT noted that an additional overview in the NIR of all waste water treatment methods in Estonia would improve the transparency of the emission estimates (example Figure 6.1 of Volume 5 in IPCC 2006 Guidelines p 6.7).</p> <p>In response to questions raised during the review, Estonia explained that they intend to include the information highlighted by the TERT in the next NIR.</p> <p>The TERT noted that this issue does not relate to an over- or underestimate and recommends that Estonia includes the missing MCF of zero for aerobic wastewater treatment plants in NIR Table 7.32 and adapts the equation 7.16 in the NIR of the next submission in accordance with the parameters and methodology used for the CO<sub>2</sub> emission estimates for domestic wastewater. The TERT also recommends Estonia to include an overview of the waste water treatment pathways, following the example of Figure 6.1 of Volume 5 in IPCC 2006 Guidelines (p 6.7) in the next submission.</p>		
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## Annex I: Legal background and procedures of the 2017 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 regulations (EU) No 749/2014.

The objectives of the 2017 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 2015 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 2017 annual ESD review of national greenhouse gas (GHG) inventory data was carried out for the compliance year 2015 pursuant to Article 19 of the MMR. The EEA review secretariat (consisting of Melanie Sporer, John van Aardenne and Emma Salisbury) coordinated the 2017 annual ESD review as foreseen in Article 28 of the Commission Implementing Regulation (EU) No 749/2014.

The scope of the 2017 annual ESD review is presented in Table A.1.1. The checks carried out during the 2017 annual ESD review are presented in Annex II.

The review consisted 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 (ETC/ACM, JRC, Eurostat). All findings from the initial checks that were relevant for the ESD and that were not resolved within the initial check phase were followed up in the second step of the annual review.

Step 2 of the 2017 annual ESD review was performed by a Technical Expert Review Team (TERT) under service contract 34.0201/2016/743206/SER/CLIMA.C2 of the Directorate General for Climate Action of the European Commission. The TERT consisted of the following experts:

- Lead Reviewers: Anke Herold, Suvi Monni, Klaus Radunsky
- Energy: Julien Vincent, Ralph Harthan, Graham Anderson
- IPPU F-gases: Barbara Gschrey, Domenico Gaudioso
- IPPU excluding F-gases: Daniela Romano, Eva Krtkova
- Agriculture: Steen Gyldenkaerne, Rocio Condor, Chris Dore, Katalin Lovas
- Waste: Hans Oonk, Kaat Jespers, Juraj Farkas
- Quality controller: Justin Goodwin
- Co-ordinator: Bernd Guegle

The lead reviewers and sector review experts did not review emission inventories of Member States where these individuals have themselves contributed to the compilation of that inventory, or presently are or have been any part of the decision-making process related to the compilation of that inventory. Reviewers who are nationals of the Member State whose inventory is concerned, did not take part in the review of that inventory.

Step 2 of the review was performed on the basis of GHG emission data and the national inventory report (NIR) officially reported by Member States by 15 March 2017 under the MMR. Where relevant, the TERT calculated technical corrections for over- or underestimates identified in a mandatory category in the Member States' GHG inventories that exceed the threshold of significance. Technical corrections were calculated for the year 2015.

**Table A.1.1: Scope of the 2017 annual ESD review**

Element	Scope	Further information
Member States	EU geographical coverage of the Member States	
Years	2015	
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, 2017	

## Annex II: Checks carried out during the 2017 annual ESD review in line with Art.29 and 32 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, accuracy, 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.

### **Second step review checks:**

1. Detailed examination of the inventory estimates including methodologies used by the Member State in the preparation of inventories;
2. Detailed analysis of the Member State's implementation of recommendations related to improving inventory estimates as listed in its most recent UNFCCC annual review report made available to that Member State before the submission under review or in the final review report pursuant to Article 35(2) of this Regulation; where recommendations have not been implemented a detailed analysis of the justification provided by the Member State for not implementing them;
3. Detailed assessment of the time series consistency of the greenhouse gas emissions estimates;
4. Detailed assessment whether the recalculations made by a Member State in the given inventory submission as compared to the previous one are transparently reported and made in accordance with the 2006 IPCC Guidelines for National Greenhouse Gas Inventories;
5. Follow-up on the results of the checks referred to in Article 29 of the Commission Implementing Regulation (EU) No 749/2014 and on any additional information submitted by the Member State under review in response to questions from the technical experts review team and other relevant checks.