

Final Review Report

2018 annual review of national greenhouse gas inventory data

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

Bulgaria

30 June 2018

European Environment Agency



Reference: 340201/2017/765292/SER/CLIMA.C2
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Conclusions from the 2018 annual ESD review

This Final Review Report presents the findings from the 2018 annual review of the GHG emission inventory of Bulgaria, pursuant to Article 19(2) of Regulation (EU) No 525/2013, with a view to monitoring Bulgaria'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 2016.

The reviewers carried out checks to verify the transparency, accuracy, consistency, comparability and completeness of the national greenhouse gas inventory for the year 2016 submitted in 2018 by Bulgaria pursuant to Articles 7(1) and 7(3) of Regulation (EU) No 525/2013.

The review consisted of 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 2018 annual ESD review.

More information on the Effort Sharing Decision and the procedures for the 2018 annual ESD review is presented in the annexes to this review report.

Step 1 conclusions

The EU inventory team identified 2 significant issues through the checks performed in Step 1. Therefore, Bulgaria was subject to a second step of the 2018 annual ESD review. Only significant issues were subject to the second step review checks.

Step 2 conclusions

1. The TERT considered 2 issues from Step 1 in the second step of the review 2018. The TERT provided recommendations for these 2 issues (see Table 1).
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 within the meaning of Article 19(3)(c) of Regulation (EU) No 525/2013 in consultation with Bulgaria.
4. The TERT identified non-binding recommendations in order to improve the national inventory data of Bulgaria (see Table 4).
5. The TERT considers that it received a response from Bulgaria that was sufficient in order to undertake the annual review appropriately.

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

	Issues raised ¹	Recommendations	Revised estimates ²	Technical corrections ³
Total	22	2	-	-
Energy	4	-	-	-
IPPU	10	-	-	-
Agriculture	6	-	-	-
Waste	2	2	-	-
Cross-cutting	-	-	-	-

¹ Excluding findings related to Land use, land use change and forestry (LULUCF) and LULUCF KP.

² Revised estimates: changes in inventory estimates triggered by the review and provided by the Member State.

³ 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 ₂ equivalent) ¹ 2016
Total greenhouse gas emissions, including indirect CO ₂ , without land use, land-use change and forestry as reported by Bulgaria pursuant to Articles 7(1) and 7(3) of Regulation (EU) No 525/2013	BGR_2018_1_14032018	59 059.734
Total greenhouse gas emissions		59 059.734
CO ₂ emissions from 1.A.3.a Domestic aviation	BGR_2018_1_14032018	60.953
NF ₃ emissions	BGR_2018_1_14032018	-

¹ 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 ₂ equivalent) ¹ 2016
Total greenhouse gas emissions	<i>See Table 2 above</i>	59 059.734
Total verified emissions from stationary installations under Directive 2003/87/EC	Extracted by the European Commission from EUTL on 8 March 2018 (as agreed at the Working Group I of the Climate Change Committee on 18 May 2015) ²	33 410.834
CO ₂ emissions from 1.A.3.a Domestic aviation	<i>See Table 2 above</i>	60.953
NF ₃ emissions	<i>See Table 2 above</i>	-
Total ESD emissions		25 587.947

¹ 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.

² 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 Bulgaria on the conclusions presented by the TERT

Bulgaria agrees with the aggregated GHG emission inventory estimates presented in Table 3.

Recommendations from the TERT including revised estimates and technical corrections

Table 4: Recommendations from the TERT

EMRT - ID	Key category	Category, gas, year	Conclusion step 2 note	Revised estimate	Technical correction
BG-5D-2018-0002	Yes	5.D Wastewater treatment and discharge, CH ₄ , 2016	For 5.D.1 Domestic wastewater, CH ₄ , 1990-2016 the TERT noted that emissions decreased (-12%) between 2015 (25.53 kt CH ₄) and 2016 (22.59 kt CH ₄) according to January 2018 submission. Bulgaria then provided March 2018 and April 2018 submissions, explaining that emissions for 2015 had to be recalculated due to technical errors. In response to a question raised by TERT during the review, Bulgaria provided its calculation spreadsheet and explained that the technical errors were caused by summing revised and not revised emissions. The TERT noted, that in the latest submission (April 2018) emissions from 5.D.1 decreased (-4.6% or -1.09 kt CH ₄ or -27.2 kt CO ₂ eq) between 2015 (23.67 kt CH ₄) and 2016 (22.59 kt CH ₄), which is however below the threshold of significance for Bulgaria (29.53 kt CO ₂ eq). Strong increases/decreases in year-by-year emissions are caused by the model itself, which strictly follows the 2006 IPCC Guidelines (Eq. 6.1). From the perspective of the TERT an improvement could be achieved by adding methane generation from anaerobic digestion of sludge; however, this suggestion is beyond the scope of the current IPCC methodology.	No	No
BG-5D-2018-0003	Yes	5.D Wastewater treatment and discharge, CH ₄ , 2016	For 5.D.2 Industrial wastewater, CH ₄ , 1990-2016 the TERT noted that CH ₄ emissions increased by +44% between 2015 (8.61 kt CH ₄) and 2016 (12.42 kt CH ₄) according to January 2018 submission. Bulgaria prepared a new submission by March 2018 where the 2015 data were recalculated which leaves an increase in emissions of +7% between 2015 (11.57 kt CH ₄) and 2016 (12.42 kt CH ₄). In response to a question raised during the review, Bulgaria explained that the changes have resulted from obtaining new activity data from the National Statistical Institute. The TERT also notes that Bulgaria used for estimation of industrial waste water emissions in the years 2017, 2016 and 2015 three different datasets for TOW in industrial wastewater. This resulted in significant changes in emissions. According to March 2018 submission, the change between 2015 to 2016 is 21.25 Kt CO ₂ eq, which is however below the threshold of significance for Bulgaria (29.53 kt CO ₂ eq). The TERT recommends that Bulgaria improves its QA/QC process to enhance accuracy of data.	No	No

Annex I: Legal background and procedures of the 2018 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 2018 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 2016 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 2018 annual ESD review of national greenhouse gas (GHG) inventory data was carried out for the compliance year 2016 pursuant to Article 19 of the MMR. The EEA review secretariat (consisting of Melanie Sporer, Claire Qoul and Emma Salisbury) coordinated the 2018 annual ESD review as foreseen in Article 28 of the Commission Implementing Regulation (EU) No 749/2014.

The scope of the 2018 annual ESD review is presented in Table A.1.1. The checks carried out during the 2018 annual ESD review are presented in Annex I.

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 (EEA, 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 2018 annual ESD review was performed by a Technical Expert Review Team (TERT) under service contract 340201/2017/765292/SER/CLIMA.C2 of the Directorate General for Climate Action of the European Commission. The TERT consisted of the following experts:

- Lead Reviewers: Suvi Monni, Klaus Radunsky
- Energy: Laetitia Nicco, Graham Anderson, Ioannis Sempas
- IPPU: Kristina Kaar, Eva Krtkova
- Agriculture: Etienne Mathias, Katalin Lovas
- Waste: Hans Oonk, Juraj Farkas
- Quality controller: Justin Goodwin
- Co-ordinator: Bernd Gugele

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 2018 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 2016.

Table A.1.1: Scope of the 2018 annual ESD review

Element	Scope	Further information
Member States	EU geographical coverage of the Member States	
Years	2016	
Gases	CO ₂ , CH ₄ , N ₂ O, HFCs, PFCs, SF ₆	NF ₃ 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 ₂ emissions	Included in national total	
Inventory Submission	Submissions received by 15 March 2018	

Annex II: Checks carried out during the 2018 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, 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.