

Final Review Report

2017 annual review of national greenhouse gas inventory data

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

Romania

30 June 2017

European Environment Agency



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Contents

| | |
|--|----|
| Conclusions from the 2017 annual ESD review | 3 |
| Step 1 conclusions | 3 |
| Step 2 conclusions | 3 |
| National totals | 5 |
| Greenhouse gas emissions covered by Decision 406/2009/EC..... | 6 |
| Statement from Romania on the conclusions presented by the TERT..... | 7 |
| Revised estimates provided the MS and accepted by TERT..... | 8 |
| Recommendations from the TERT, considering revised estimates and technical corrections deemed necessary by the TERT | 9 |
| Annex I: Legal background and procedures of the 2017 annual ESD review | 10 |
| 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 | 12 |

List of tables

| | |
|--|---|
| Table 1: Issues raised with Romania during the first and the second step | 4 |
| Table 2: National totals | 5 |
| Table 3: Greenhouse gas emissions covered by Decision 406/2009/EC..... | 6 |
| Table 4: Recommendations from the TERT | 9 |

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 Romania, pursuant to Article 19(2) of Regulation (EU) No 525/2013, with a view to monitoring Romania'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 Romania 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, two significant issues. Therefore Romania was subject to a second step of the 2017 annual ESD review. Only significant issues were subject to the second step review checks.

Step 2 conclusions

1. The reviewers raised 48 issues with Romania during the first and the second step of the review 2017 (see Table 1). The TERT provided recommendations for two 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. In particular, the TERT identified an underestimate or overestimate exceeding the threshold of significance pursuant to Article 31 of Commission Implementing Regulation (EU) No 749/2014.
3. Romania provided one revised estimate. The TERT agreed to the revised estimate. Table 2 below summarises the revised estimates and further information is provided at the end of this report.
4. 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 Romania.
5. The TERT identified non-binding recommendations in order to improve the national inventory data of Romania (see Table 4).
6. The TERT considers that it received a response from Romania that was sufficient in order to undertake the annual review appropriately.

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

| | Issues raised | Recommendations | Revised estimates ¹ | Technical corrections ² |
|---------------|---------------|-----------------|--------------------------------|------------------------------------|
| Total | 48 | 2 | 1 | - |
| Energy | 15 | 2 | 1 | - |
| IPPU | 13 | - | - | - |
| Agriculture | 16 | - | - | - |
| Waste | 4 | - | - | - |
| Cross-cutting | - | - | - | - |

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

² 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 |
|---|-------------------------------|--|
| | | 2015 |
| Total greenhouse gas emissions, including indirect CO ₂ , without land use, land-use change and forestry as reported by Romania pursuant to Article 7(3) of Regulation (EU) No 525/2013. | ROU_2016_5_Inventory_13032017 | 116 426.728 |
| Difference between original estimate and revised estimate provided by Romania and accepted by the TERT² | | |
| Missing estimate 2.D.3 - other, CO ₂ | RO-1AB-2017-0001 | 650.967 |
| Total greenhouse gas emissions including accepted revised estimate provided by Romania | | 117 077.695 |
| CO ₂ emissions from 1A3a Domestic aviation | ROU_2016_5_Inventory_13032017 | 125.972 |
| NF ₃ emissions | ROU_2016_5_Inventory_13032017 | - |

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 A positive difference indicates an increase compared to reported emissions. A negative difference indicates a decrease compared to reported emissions.

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 |
|--|---|---|
| | | 2015 |
| Total greenhouse gas emissions including accepted revised estimate provided by Romania | <i>See Table 2 above</i> | 117 077.695 |
| 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) ² | 42 396.344 |
| CO ₂ emissions from 1.A.3.a Domestic aviation | <i>See Table 2 above</i> | 125.972 |
| NF ₃ emissions | <i>See Table 2 above</i> | - |
| Total ESD emissions | | 74 555.379 |

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 Romania on the conclusions presented by the TERT

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

Revised estimates provided the MS and accepted by TERT

| | | |
|---|---|---|
| 1 | ESD Review Tool ID: | RO-1AB-2017-0001 |
| | ESD Review Tool URL: | https://emrt.eea.europa.eu/2017/RO-1AB-2017-0001 |
| | Member State: | Romania |
| | Sector: | 2.D.3 Other and CRF table 1.A(d) |
| | Gases: | CO ₂ |
| | Fuel | Liquid fuels |
| | Completed by (SE): | Graham Anderson |
| | Reviewed by (Counterpart): | Julien Vincent |
| | Reviewed by (LR): | Suvi Monni |
| | The underlying problem: | According to CRF table 1.A(d), emissions from non-energy use of petroleum coke were reported under category 2.D.3 – other. However, CO ₂ emissions from 2.D.3 – other were reported as “NO” in CRF table 2(l).A-Hs2. |
| | The rationale for the corrected estimate: | During the review, Romania explained that emissions from the use of petroleum coke in refineries is reported under 1.B.2.a.6 and noted that non-energy use of petroleum coke that should have been included under 2.D.3 – other was excluded from the inventory. Revised CO ₂ estimates which are consistent between CRF categories 1.B.2.a.6, 2.D.3 and CRF table 1.A(d) were provided to the TERT. |
| | Summarise the methodology used: | Romania used the total amount of petroleum coke reported in CRF table 1.A(d) and subtracted the amount used as refinery fuel reported under 1.B.2.a.6 (CRF table 1.B.2) to obtain the non-energy use of petroleum coke. Country-specific NCV and CO ₂ EF were used to calculate the CO ₂ emissions from non-energy use under 2.D.3 – other. This revision did not have an impact on the emissions reported under 1.B.2.a.6. |
| | References to other workbooks: | Romania sent the revised estimate in the file "Calculation Petroleum coke non-energy used-Reference Approach -2.D.3 Other - 1.B.2.a.6 - Other.xlsx". |

2

| | | | | | | | | |
|--|------|---|-----------------|------------------|------|------|-----------------|-------|
| Details of the corrected estimate | | | | | | | | |
| | | Original estimate (Gg CO ₂ eq) | | | | | | Notes |
| | Year | CO ₂ | CH ₄ | N ₂ O | HFCs | PFCs | SF ₆ | |
| RO-1AB-2017-0001-OE | 2015 | NO | | | | | | |
| Was a Revised Estimate received from the MS? | | yes | | | | | | |
| | | Revised Estimate received from MS (Gg CO ₂ eq) | | | | | | Notes |
| | Year | CO ₂ | CH ₄ | N ₂ O | HFCs | PFCs | SF ₆ | |
| RO-1AB-2017-0001-RE | 2015 | 650.967 | | | | | | |
| Was the Revised Estimate accepted by the TERT? | | yes | | | | | | |
| | | Technical Correction calculated by TERT (Gg CO ₂ eq) | | | | | | Notes |
| | Year | CO ₂ | CH ₄ | N ₂ O | HFCs | PFCs | SF ₆ | |
| RO-1AB-2017-0001-TC | 2015 | | | | | | | |
| Was the Technical Correction accepted by the MS? | | - | | | | | | |

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 |
|-------------------|--------------|---|---|------------------|----------------------|
| RO-1A4c-2017-0001 | No | 1.A.4.c Agriculture/forestry/fishing, CO ₂ , 2013-215 | For 1.A.4.c Agriculture/forestry/fishing, liquid fuels, CO ₂ and years 2013-2015, the TERT notes that the IEF reported by the Party is decreasing. In response to a question raised during the review, Romania explained that ETS data has been used for calculation of CO ₂ emissions from diesel used in agriculture as it is the most accurate data available to obtain an EF for the diesel fuel. The TERT disagreed with the response noting that the IEFs (69.5 t CO ₂ /TJ in 2015) are outside the IPCC range (72.6 t CO ₂ /TJ to 74.8 t CO ₂ /TJ). The TERT noted that the issue is just below the threshold of significance for a technical correction. The TERT recommends that Romania analyse the source of the implausibly low emission factor so that the cause of this exceptionally low IEF can be rectified. | No | No |
| RO-1AB-2017-0001 | No | 1.AB Reference approach, CO ₂ , 2015 | According to the previous ESD review recommendation (RO-1AB-2016-0002), there was lack of transparency regarding where the emissions from petroleum coke reported in the reference approach CRF table 1.A(d) are allocated in the inventory. In its 2017 submission, Romania reported, in CRF table 1.A(d), column J, that non-energy use of petroleum coke is reported in the category 2.D.3 – other. The TERT noted that CO ₂ emissions from 2.D.3 – other were reported as not occurring (“NO”). During the review, Romania explained that emissions from use of petroleum coke in refineries are reported under 1.B.2.a.6. The member state also explained that it noted that CO ₂ emissions from NEU of petroleum coke should be reported under 2.D.3 - other and provided revised estimates for years 1989 to 2015 and stated that they will be included in the next submission. The TERT agreed with the revised estimate provided by Romania and presented above. The TERT recommends that Romania include the revised estimate in its next submission. | Yes | No |

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 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 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 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, 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.