Final Review Report 2020

Review of National Air Pollutant Emission Inventory Data 2020 under Directive 2016/2284 (National Emission reduction Commitments Directive) Service Contract No. 070201/2019/8159797/SER/ENV.C.3

Lithuania

20 November 2020

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**Umweltbundesamt GmbH**  
Spittelauer Lände 5  
1090 Vienna  
Austria

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Abbreviations

|  |  |
| --- | --- |
| AD | Activity data |
| C | Confidential |
| Cd | Cadmium |
| CLRTAP | Convention on Long-range Transboundary Air Pollution: the first international treaty to deal with air pollution on a broad regional basis signed by the UNECE in 1979. |
| E-PRTR | European Pollutant Release and Transfer Register |
| EC | European Commission |
| EEA | European Environment Agency |
| EF | Emission factor |
| EIONET | European Environment Information and Observation Network |
| EMEP | The co-operative programme for monitoring and evaluation of the long-range transmission of air pollutants in Europe (unofficially 'European Monitoring and Evaluation Programme' = EMEP) |
| EMRT-NECD | EEA Emission Review Tool (EMRT) for the National Emission reduction Commitments Directive (NECD) |
| EU | European Union |
| GHG | Greenhouse gas |
| HCB | Hexachlorobenzene |
| Hg | Mercury |
| HMs | Heavy metals |
| IEF | Implied emission factor |
| LPS | Large point sources |
| kt | Kilotonnes |
| NA | Not applicable |
| NECD | National Emission reduction Commitments Directive |
| NFR | Nomenclature for reporting |
| NH3 | Ammonia |
| NMVOC | Non-methane volatile organic compounds |
| NOX | Nitrogen oxides |
| NR | Not relevant |
| PAHs | Polycyclic aromatic hydrocarbons |
| Pb | Lead |
| PCB | Polychlorinated biphenyls |
| PM10 | Fine particulate matter: particles with an aerodynamic diameter equal to or less than 10 micrometres (μm) |
| PM2.5 | Fine particulate matter: particles with an aerodynamic diameter equal to or less than 2.5 micrometres (μm) |
| POPs | Persistent Organic Pollutants |
| PTC | Potential technical correction |
| RE | Revised estimate |
| SO2 | Sulphur dioxide |
| SOX | Sulphur oxides |
| TC | Technical correction |
| TERT | Technical expert review team |
| TSP | Total suspended particulates |
|  |  |
|  |  |

# Introduction

1. The review of the air pollution emission data submitted by Member States and the UK[[1]](#footnote-1) under the European Union’s National Emissions reduction Commitments Directive (Directive (EU) 2016/2284[[2]](#footnote-2)) is defined in Article 10(3):

*"The Commission, assisted by the European Environment Agency and in consultation with the Member States concerned, shall review the national emission inventory data in the first year of reporting and regularly thereafter. That review shall involve the following:*

*(a) checks to verify the transparency, accuracy, consistency, comparability and completeness of information submitted;*

*(b) checks to identify cases where inventory data is prepared in a manner which is inconsistent with the requirements set out under international law, in particular under the LRTAP Convention;*

*(c) where appropriate, calculation of the resulting technical corrections necessary, in consultation with the Member State concerned.*

*Where the Member State concerned and the Commission are unable to reach an agreement on the necessity or on the content of the technical corrections pursuant to point (c), the Commission shall adopt a decision laying down the technical corrections to be applied by the Member State concerned.”*

1. The technical review of the National Emissions reduction Commitments Directive (NECD) inventories in 2020 (hereafter referred to as the ‘NECD Review 2020’) was undertaken in accordance with the NECD Review air emission inventory review guidelines established at the beginning of the project.

# Objectives of the review

1. The general objective of the technical review of Member States’ and the UK NECD inventories as reported in February 2020 (and updated before 1 May 2020) was an improvement of transparency, consistency, comparability, completeness and accuracy of submitted data and as such the review will contribute to establishing accurate, reliable and verified emission inventories for all Member States and the UK.
2. The specific objectives of the NECD Review 2020 were:
   * A detailed review to verify that Member States and the UK have integrated all of the recommendations, unquantified potential technical corrections, technical corrections and revised estimates from the NECD Review 2019[[3]](#footnote-3).
   * A review of the recalculations between the 2019 and 2020 national inventory submissions for the pollutants NOX, NMVOC, SO2, NH3, PM2.5 for the years 2000-2017 and for the pollutants PAHs (total and individual PAHs), dioxins/furans, PCBs, HCB, Cd, Hg, Pb for the years 1990, 2005, 2016 and 2017.
   * A review of the timeseries consistency between the years 2017 and 2018 for the pollutants: NOX, NMVOC, SO2, NH3, PM2.5, PAHs (total and individual PAHs), dioxins/furans, PCBs, HCB, Cd, Hg, Pb.
   * A review of national gridded data of emissions and large point sources (LPS) for the year 2015 submitted until 15 May 2020.
   * In accordance with the requirements of the NECD (Article 5 and Annex IV) and in line with the “Technical guidance for Parties making adjustment applications and for the expert review of adjustment applications ([ECE/EB.Air/130](http://www.ceip.at/fileadmin/inhalte/emep/Adjustments/ECE_EB_AIR_130_AV_for_the_web.pdf))”[[4]](#footnote-4), an expert review of:
     1. New adjustment applications submitted in 2020, not submitted and reviewed yet in 2019 under the NECD, including the review of the supporting documentation as requested in part 4 of Annex IV of the NECD and an assessment of whether the adjustment application is consistent with the circumstances described therein
     2. The adjustment applications submitted in 2020, that were already submitted, reviewed, and accepted in 2019 under the NECD, with a focus on reviewing the consistency in the reporting of these adjustment applications.

# Review approach, team and scope

1. The scope of the NECD Review 2020 is summarised in Table 1.

Table 1: Scope of the NECD Review 2020 (under Directive (EU) 2016/2284)

|  |  |  |
| --- | --- | --- |
| **Element** | **Scope** | **Further information** |
| Geographical coverage | EU geographical coverage of the Member States as of 1 January 2020 | Includes the geographical territory of the Member States, their exclusive economic zones and pollution control zones. Excludes the Canary Islands, the French overseas departments, Madeira, and the Azores |
| Years | **Main pollutants:**  2005, 2010, 2015-18  **HMs and POPs:**  1990, 2005, 2016-18  **Gridded data:**  2015  **LPS data:**  2015 | **Main pollutants, HMs and POPs:**  In addition, time series consistency was reviewed between the years 2017 and 2018. |
| Pollutants | **Main pollutants:**  NOX, NMVOC, SO2, NH3, PM2.5,  **HMs and POPs:**  PAHs (total and individual PAHs), dioxins/furans, PCBs, HCB, Cd, Hg, Pb  **Gridded data:**  NOX, NMVOC, SO2, NH3, PM2.5, PM10, CO, Pb, Cd, Hg, dioxins/furans, total PAHs, HCB, PCBs  **LPS data:**  NOX, NMVOC, SO2, NH3, PM2.5, PM10, CO, Pb, Cd, Hg, dioxins/furans, total PAHs, HCB, PCBs | According to NECD (Directive (EU) 2016/2284) Annex I |
| Categories | **Main pollutants, HMs and POPs:**  All NFR and GNFR categories, including selected memo items  **Gridded data, LPS data:**  All GNFR categories, excluding O\_AviCruise, P\_IntShipping, z\_Memo | **Main pollutants, HMs and POPs:**  All NFR categories as listed in Annex 1 of reporting Guidelines[[5]](#footnote-5) including the following memo items:  1A3ai(ii) International aviation cruise (civil)  1A3aii(ii) Domestic aviation cruise (civil)  1A3di(i) International maritime navigation  1A3 Transport (fuel used) – where a Member State or the UK uses fuel used for compliance purposes.  **Gridded data:**  Reported data based on fuel used will be considered in selected cases. |
| National totals | National total and National total for compliance | Rows 141 and 154 in Annex 1 of reporting Guidelines |

1. The review was split into two phases:
2. **Initial checks** were carried out by the project team under service Contract No. 070201/2019/8159797/SER/ENV.C.3. Significant findings from the initial checks that were not resolved within the initial checks phase were followed up by the technical expert review team during the desk review and centralised review.
3. **A desk review and centralised review** were performed by the technical expert review team under Contract No. 070201/2019/8159797/SER/ENV.C.3. The technical expert review team consisted of the following experts:

* **Lead Reviewers:** Justin Goodwin, Anne Misra, Ole-Kenneth Nielsen
* **Energy:** Stijn Dellaert, Marlene Schmidt Plejdrup, Robert Stewart
* **Transport:** Jean-Marc André, Matina Kastori, Yvonne Pang
* **IPPU:** Coralie Jeannot, Ils Moorkens, Maria Purzner
* **Agriculture:** Anais Durand, Mette Mikkelsen and Beatriz Sánchez
* **Waste:** Romain Bort, Céline Gueguen and Dirk Wever
* **Gridding:** Katie King, Jeroen Kuenen, Ioannis Tsagatakis

This year the desk review had two phases: an initial four weeks for sector experts to review inventories with one week for Member States and the UK to reply to questions; then a further two weeks for sector experts and lead reviewers to send follow-up questions with one week for Member States and the UK to reply. After this the one-week centralised review took place remotely.

1. The desk review and centralised review were coordinated by the project team (led by Sabine Schindlbacher and Chris Dore).
2. The EEA Review Secretariat led by Federico Antognazza supported the NECD Review 2020.
3. The review was performed on the basis of NECD emission data officially reported by Lithuania by 15 February 2020 for emission inventory and by 1 May 2017 for gridded emission inventory data and LPS data. The Informative Inventory Reports (IIR) reported by 15 March 2020 under the NECD were taken as a base for the review. For the review of emission inventory resubmissions and other additional information officially submitted by Member States and the UK were taken into account until 1 May 2020. For the review of gridded emission inventory data and LPS data resubmissions were taken into account until 15 May 2020.
4. To avoid any potential conflicts of interest, the lead reviewers and sector experts did not review emission inventories of Member States or the UK 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 or the UK whose inventory is concerned, did not act as main sector expert for this Member State or the UK.
5. All sector experts signed confidentiality agreements in which they agreed to keep information received by Member States and the UK confidential.
6. Definitions for findings included in the Final Review Report can be found in Table 2. Findings listed in the tables of recommendations are ordered by type (Technical Corrections, Revised Estimates, Unquantified Potential Technical Corrections, and Recommendations) and are second sorted by NFR code.

Table 2: Definitions for finding classifications of the NECD review.

|  |  |
| --- | --- |
| **Concluded Findings** | |
| Recommendation | Findings where an identified issue has not been resolved during the course of the review and which is not for a mandatory year or category or above the threshold of significance. |
| RE | Revised Estimate: Findings for which a Member State or the UK has provided new estimates in response to an issue raised by the technical expert review team (TERT) during the course of the review. |
| UPTC | Unquantified Potential Technical Correction: Findings for which quantifying a technical correction is not currently possible by the technical expert review team. This is for cases where the expected impact is likely to exceed the determined thresholds of significance, but it is not possible to quantify the technical correction as part of the review. The situations where this may arise include but are not limited to situations:   1. Where Tier 1 methods are used to make emission estimates for a key category 2. Issues raised under the review of large point sources 3. Issues raised under the review of gridded data |
| TC  *(only issued in the Final Review Report)* | Technical corrections: Issued by the technical expert review team for issues identified which relate to an over or under estimate of more than a 2% on the national total in one of the reported years under review and where Member States or the UK did not provide a revised estimate which was accepted by the technical expert review team (TERT). |

# Overall assessment of the quality of the submissions

1. The technical expert review team considers the inventory submission to be of adequate quality in terms of completeness and accuracy. The IIR does not describe the methods transparently enough for a range of categories across Energy, IPPU, Agriculture and Waste as well as for its estimates for uncertainties.
2. The LPS data submission was good in terms of completeness and background information was documented transparently.
3. The gridded data submission was poor in terms of completeness and background information was not documented transparently. The TERT noted that there is a lack of transparency regarding gridded emissions and a lack of appropriate distributions for GNFR sectors.
4. To improve the quality of these submissions, the technical expert review team suggests that Lithuania:

* addresses a range of technical corrections and unquantified potential technical corrections as well as transparency issues (outlined below);
* addresses issues where HMs and POPs may not be reported adequately;
* makes improvements to the gridding methods for the 2021 submission with distributions that reflect activities in all relevant GNFR sectors for all pollutants and also provides a chapter in the IIR outlining the methods used to generate all of the gridded estimates.

1. The TERT recommends that Lithuania reports emissions in line with the 2019 EMEP/EEA Guidebook in their next submission.
2. The technical expert review team considers that it received responses from Lithuania that were sufficient in order to undertake the NECD Review 2020.

# Findings and conclusions from the technical expert review team for the follow-up review of national emission inventories for NOX, NMVOC, SO2, NH3, and PM2.5

1. The technical expert review team assessed the implementation of all findings from the NECD Review 2019. This assessment was based on the emission inventory submitted under the NECD in 2020 by Lithuania pursuant to Directive (EU) 2016/2284 and their review report from the NECD Review 2019.
2. Resubmissions and other additional information provided by Lithuania during the review were taken into account until 1 May 2020.
3. Table 3 gives an overview of the number of recommendations, revised estimates, technical corrections and unquantified potential technical corrections for NOX, NMVOC, SO2, NH3 and PM2.5 that are included in Table 4. It also indicates in which NECD Review these findings were raised for the first time. Further, it shows how many findings have been implemented by Lithuania in their inventory submission 2020. The table also shows the range of recommendations, revised estimates, technical corrections and unquantified potential technical corrections that were included in the NECD Review reports for other Member States and the UK.
4. Table 4 provides all the recommendations, revised estimates, technical corrections and unquantified potential technical corrections from the technical expert review team related to NOX, NMVOC, SO2, NH3 and PM2.5 including those additionally made during the NECD Review 2020 and those not implemented from the NECD Review 2019.

Table 3: Overview of the number of findings from the NECD Review 2020 and previous NECD reviews related to NOX, NMVOC, SO2, NH3, PM2.5

|  | | Findings included in the 2020 Review Report by year of origin (see Table 4 below) | | | | Implemented findings |
| --- | --- | --- | --- | --- | --- | --- |
| TC\* | RE\* | UPTC\* | Recom.\* |
| Finding first raised in: | NECD Review 2017 | 0 | 2 | 2 | 13 | 10 |
| NECD Review 2018 | 0 | 0 | 1 | 3 | 2 |
| NECD Review 2019 | 2 | 0 | 1 | 5 | 10 |
| NECD Review 2020 | 1 | 2 | 0 | 7 | n/a |
| Total from NECD Review 2020 | | 3 | 4 | 4 | 28 |  |
| (Range for All Member States and the UK) | | **(0-3)** | **(0-4)** | **(0-4)** | **(0-28)** |

\* TC = Technical Correction, RE = Revised Estimate, UPTC = Unquantified Potential Technical Correction Recom. = Recommendation

Table 4: All recommendations, revised estimates, technical corrections and unquantified potential technical corrections including those additionally made during the NECD Review 2020 and those not implemented from previous reviews, for NOX, NMVOC, SO2, NH3, PM2.5

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2019 (2) | LT-2A5b-2019-0001 | Yes | 2A5b Construction and Demolition, PM2.5, 2005-2016 | TC | TC | No |
| **Assessment of the implementation of the initial recommendation** For 2A5b Construction and Demolition, for PM2.5 emissions, in years 2005, 2016, 2017 the TERT noted that in response to a question raised during the review Lithuania explained the difficulty in obtaining data on lengths of new roads but did not provide a revised estimate. The TERT decided to calculate a technical correction for the 2005, 2010, 2015-18 which was accepted by Lithuania. The estimates demonstrate that the issue is above the threshold of significance.  **The TERT recommends that Lithuania include a revised estimate in its next submission.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2020 (1) | LT-3B1b-2020-0001 | No | 3B1b Manure Management - Non-Dairy Cattle, NH3, 2001-2004 | N/A | TC | No |
| **Recommendation** For NH3 emission for 3B1b Non-Dairy Cattle for years 1990-2018 the TERT identified a potential under-estimate exceeding the threshold of significance. As a respond to a revised estimated provided by the TERT, Lithuania produced a revised estimate based on national data based on a calculation, which follows the equations given in the EEA/EMEP Guidebook. The TERT checked the calculation and found an inconsistency with the number given in NFR or CRF submission 2020, and therefore the TERT disagreed with the revised estimate calculated by Lithuania. Because of the uncertainties regarding the livestock production, the TERT decided to keep the proposed technical correction. Both estimates provided by the TERT and Lithuania demonstrate that the issue is above the threshold of significance.  **The TERT recommends that Lithuania provide a revision to these estimates in its next submission based on a number of non-dairy cattle which is in consistent with the number given in CRF reporting.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2019 (2) | LT-5A-2019-0002 | Yes | 5A Biological Treatment of Waste - Solid Waste Disposal on Land, NMVOC, 2000-2017 | No | TC | Yes |
| **Assessment of the implementation of the initial recommendation** For NMVOC emissions from 5A - Solid Waste Disposal and all years, a Tier 1 method is used for a key category. The TERT notes that using a Tier 1 method is not best practice, and result in an over-estimate of emissions.  This was raised during the 2019 NECD review and the methodology proposed by the TERT in 2019 was not implemented. During the 2020 NECD review, Lithuania explained that a higher Tier method will be implemented in the next submission but did not provide a revised estimate. The TERT decided to calculate a technical correction for the years 2005, 2010 and 2015-2018 which was accepted by Lithuania. The estimates demonstrate that the issue is above the threshold of significance in 2005 and 2010.  **The TERT recommends that Lithuania include a revised estimate in its next submission.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2017 (4) | LT-1A3bv-2017-0001 | No | 1A3bv Road Transport: Gasoline Evaporation, NMVOC, 2000-2017 | No | RE | No |
| **Assessment of the implementation of the initial recommendation** For 1A3bv Road Transport: Gasoline Evaporation, for pollutant NMVOC, for all years, the TERT noted an underestimation of emissions. In response to a question raised during the review, Lithuania explained that these emissions are calculated on Tier 3 level automatically in COPERT and the TERT requested a recalculation of these emissions. Lithuania provided revised estimates for years 2010, 2015-2018. The TERT agreed with the revised estimate provided by Lithuania.  **The TERT recommends that Lithuania include the revised estimate in its 2021 NFR and IIR submission.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2017 (4) | LT-1A3ei-2017-0001 | No | 1A3ei Pipeline Transport, PM2.5, 1990-2015 | No | RE | No |
| **Assessment of the implementation of the initial recommendation** For 1A3ei Pipeline Transport, for PM2.5 emissions the TERT noted that these emissions were not included in the 2020 NFR, even though last year a revised estimate was provided. In response to a question raised during the review, Lithuania explained that this was a management error and PM2.5 from this source will be included in 2021 submission. Lithuania provided revised estimates for years 2005, 2010, 2015, 2016, 2017 and 2018. The TERT agreed with the revised estimate provided by Lithuania.  **The TERT recommends that Lithuania include the revised estimate in its 2021 NFR and IIR submission.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2020 (1) | LT-3B1a-2020-0001 | Yes | 3B1a Manure Management - Dairy Cattle, NH3, 2000-2017 | N/A | RE | No |
| **Recommendation** For NH3 emission for 3B1a Dairy Cattle for years 1990-2018 the TERT identified a potential under-estimate exceeding the threshold of significance. In response to a question raised during the review, Lithuania explained that they were not able to submit the underlying calculations corresponding to the emissions reported in sub2020. In respond to a potential technical correction provided by the TERT, Lithuania provided a revised estimate based on national data. The TERT agreed with the revised estimate provided by Lithuania.  **The TERT recommends that Lithuania include the revised estimate in its 2021 and include information in the IIR submission for all the key parameters used in the calculation.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2020 (1) | LT-3B3-2020-0001 | Yes | 3B3 Manure Management - Swine, NH3, 2000-2015 | N/A | RE | No |
| **Recommendation** For NH3 emission for 3B3 Swine for years 1990-2018 the TERT noted that in response to a question raised during the review Lithuania did not provide a clear response to questions from the TERT. The TERT decided to calculate a technical correction for the year 1990-2018, which was accepted by Lithuania. The estimates demonstrate that the issue is above the threshold of significance for year 2005 and 2010.  **The TERT recommends that Lithuania include a revised estimate in its next submission and include description in IIR of the key parameters used in the calculation** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2017 (4) | LT-2D3d-2017-0001 | Yes | 2D3d Coating Applications, NMVOC, 1990-2015 | No | UPTC | No |
| **Assessment of the implementation of the initial recommendation** The TERT notes with reference to category 2D3d Coating Applications, for NMVOC emissions and years 1990-2018 that a Tier 1 method is used for a key category . The TERT notes that using a Tier 1 method is not best practice and could result in an over- or under-estimate of emissions. This over- or under-estimate may have an impact on total emissions that is above the threshold of significance. Lithuania has not provided a revised estimate which has been accepted by the TERT. It is currently not possible for the TERT to provide a numerical emission estimate based on a Tier 2 method, and therefore the issue will be flagged as Potential Technical Correction and will be assessed as a high priority item in future reviews.  **The TERT recommends that Lithuania should calculate NMVOC emissions from 2D3d Coating Applications using a Tier 2 or Tier 3 method for inclusion in next years’ inventory submission.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2019 (2) | LT-2D3h-2019-0001 | Yes | 2D3h Printing, NMVOC, 1990-2018 | No | UPTC | No |
| **Assessment of the implementation of the initial recommendation** The TERT notes with reference to category 2D3h Printing and pollutant NMVOC for all years that a Tier 1 method is used for a key category. The TERT notes that using a Tier 1 method is not best practice and could result in an over- or under-estimate of emissions. This over- or under-estimate may have an impact on total emissions that is above the threshold of significance. Lithuania has not provided a revised estimate which has been accepted by the TERT. It is currently not possible for the TERT to provide a numerical emission estimate based on a Tier 2 method, and therefore the issue will be flagged as Potential Technical Correction and will be assessed as a high priority item in future reviews.  **The TERT recommends that Lithuania should calculate NMVOC emissions from 2D3h Printing using a Tier 2 method for inclusion in next years’ inventory submission.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2017 (4) | LT-2D3i-2017-0001 | No | 2D3i Other Solvent Use, SO2, NOX, NH3, NMVOC, PM2.5, 1990-2018 | No | UPTC | No |
| **Assessment of the implementation of the initial recommendation** The TERT notes with reference to category 2D3i Other Solvent Use and pollutants NMVOC and PM2.5 for all years an under-estimate of emissions. The TERT noted that Lithuania reported emissions of fireworks, tobacco and shoes, but not other sources included under NFR category 2D3i such as Glass Wool Induction, Mineral Wool Induction, Fat, edible and non-edible oil extraction, Preservation of wood, Vehicles dewaxing, Underseal treatment and conservation of vehicles, Application of glues and adhesives, for which a Tier 2 methodology is provided in the 2016 EMEP/EEA Guidebook. This was first raised during the 2017 and 2018 NECD reviews. This under-estimate may have an impact on total emissions that is above the threshold of significance. The TERT notes the discussion held throughout the review with Lithuania on the difficulties with making a corrected estimate and notes that it is currently not possible for the TERT to provide a numerical emission estimates for a Tier 2 method. Lithuania has not provided a revised estimate which has been accepted by the TERT and therefore the issue will be flagged as Potential Technical Correction and will be assessed as a high priority item in future reviews.  **The TERT recommends that Lithuania should calculate NMVOC and PM2.5 emissions from all relevant sources in category 2D3i using a Tier 2 method for inclusion in next years’ inventory submission.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2018 (3) | LT-3D-2018-0001 | Yes | 3D Crop Production and Agricultural Soils, NH3, 1990-2016 | UPTC | UPTC | No |
| **Assessment of the implementation of the initial recommendation** The TERT notes with reference to NH3 emission from 3Da2a Animal Manure Applied to Soils and 3Da3 Urine and Dung Deposited by Grazing Animals 1990-2018 an issue in emission estimates that may relate to an over- or under-estimate of emissions, which may have an impact on total emissions that is above the threshold of significance. Lithuania has not provided a revised estimate, but refer to a revised estimate for 3B1a, 3B1b and 3B3. The TERT and Lithuania have accepted the revised estimate for 3B1a and 3B3, while the TERT do not accepted the revised estimate for 3B1b due to inconsistency in number of non-dairy cattle compared to NFR and CRF submission 2020. It is currently not possible for the TERT to provide a numerical emission and therefore the issue will be flagged as Unquantified Potential Technical Correction and will be assessed as a high priority item in future reviews.  **The TERT recommends that Lithuania should calculate the NH3 emissions from 3Da2a Animal manure applied to soils and 3Da3 based on a Tier 2 method and consistently with the revised estimate for 3B1a and 3B3, and a corrected calculation of 3B1b (number of animal) for inclusion in next years’ inventory submission.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2019 (2) | LT-1A1b-2019-0001 | Yes | 1A1b Petroleum Refining, SO2, 2000-2016 | No | No | No |
| **Assessment of the implementation of the initial recommendation** For 1A1b Petroleum Refining, for SO2, in years 2000-2018 the TERT noted that there is a lack of transparency regarding recalculations. This does not relate to an over- or under-estimate of emissions. In response to a question raised during the review, Lithuania provided emission estimation data and explained that from the 2021 submission the fuel balance 'Consumption in manufacture of refined petroleum products' compiled by Statistics Lithuania will be used as activity data for 1A1b and will exclude the refinery thermal power plant from 1A1a, in correspondence with the approach in the GHG inventory.  **The TERT recommends that Lithuania include in the 2021 IIR a detailed description of the methodology, i.e. activity data and emission factors and descriptions of any recalculations or change of methodology** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2018 (3) | LT-1A2gviii-2018-0001 | No | 1A2gviii Stationary Combustion in Manufacturing Industries and Construction: Other, PM2.5, 1990-2018 | No | No | No |
| **Assessment of the implementation of the initial recommendation** For 1A2gviii Stationary Combustion in Manufacturing Industries and Construction: Other for PM2.5 for all years the TERT noted that there is a lack of transparency regarding information and explanation on the sector (i.e. the methodology used, activity data and emission factors used). Only a comment referring to the use of default 2019 EMEP/EEA Guidebook emission factors is included in the IIR (page 72 of the IIR). This does not relate to an over- or under-estimate of emissions. This was raised during the 2018 and 2019 NECD reviews. In response to a question raised during the review, Lithuania explained that the abatement efficiencies that is applied have been recalculated and provided the new abatement efficiencies.  **The TERT reiterates the recommendation from the 2018 and the 2019 review to add an explanation to the IIR.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2017 (4) | LT-1A3ai(ii)-2017-0001 | No | 1A3ai(ii) International Aviation Cruise (Civil) - Memo Item, SO2, NOX, NH3, NMVOC, PM2.5, 1990-2018 | No | No | No |
| **Assessment of the implementation of the initial recommendation** For Memo-Item categories 1A3ai(ii) International Aviation Cruise (Civil) and 1A3aii(ii), IIR 2020 and NFR 2020 the TERT noted that there is a lack of transparency regarding the fact that emissions from these categories are not reported in corresponding NFR table. This does not relate to an over- or under-estimate of emissions. This was raised during the 2017, 2018 and 2019 NECD reviews. In response to a question raised during the review, Lithuania explained that these emissions will be calculated in 2021 submission using EUROCONTROL data.  **The TERT recommends that Lithuania calculates emissions from these categories and includes them in the next submission of 2021.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2017 (4) | LT-1A3bvi-2017-0001 | No | 1A3bvi Road Transport: Automobile Tyre and Brake Wear, PM2.5, 2000-2015 | TC | No | No |
| **Assessment of the implementation of the initial recommendation** For category 1A3bvi Road Transport: Automobile Tyre and Brake Wear for PM2.5 emissions the TERT noted that there is a lack of transparency regarding the fact that the calculation method of these emissions is not explained properly in the IIR 2020. This does not relate to an over- or under-estimate of emissions, since the TERT used activity data from Eurostat and emission factors from the 2019 EMEP/EEA Guidebook to calculate these emissions and concluded that the difference is below the threshold of significance. This was raised during the 2017, 2018 and 2019 NECD reviews. In response to a question raised during the review, Lithuania provided a file with calculations, but information was missing, and it was not clear how these emissions were calculated.  **The TERT recommends that Lithuania includes in the next submission clear information on the calculation method used, as well as relevant activity data and emission factors.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2017 (4) | LT-1A3bvii-2017-0001 | No | 1A3bvii Road Transport: Automobile Road Abrasion, PM2.5, 1990-2015 | No | No | No |
| **Assessment of the implementation of the initial recommendation** For category 1A3bvii Road Transport: Automobile Road Abrasion for PM2.5 emissions the TERT noted that there is a lack of transparency regarding the fact that the calculation method of these emissions is not explained properly in the IIR 2020. This does not relate to an over- or under-estimate of emissions, since the TERT used activity data from Eurostat and emission factors from the 2019 EMEP/EEA Guidebook to calculate these emissions and concluded that the difference is below the threshold of significance. This was raised during the 2017, 2018 and 2019 NECD reviews. In response to a question raised during the review, Lithuania provided a file with calculations, but information was missing, and it was not clear how these emissions were calculated.  **The TERT recommends that Lithuania includes in the next submission clear information on the calculation method used, as well as relevant activity data and emission factors.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2019 (2) | LT-1A3dii-2019-0001 | No | 1A3dii National Navigation (Shipping), PM2.5, 2000-2018 | No | No | No |
| **Assessment of the implementation of the initial recommendation** For category 1A3dii National Navigation (Shipping), for the years 2000-2018 the TERT noted that there is a lack of transparency regarding the fact that the estimate for PM2.5 is larger than the estimate for PM10. This does not relate to an over- or under-estimate of emissions. In response to a question raised during the review, Lithuania explained that this issue is an error and will be corrected in submission 2021.  **The TERT recommends that Lithuania corrects this issue and provide correct estimates for PM2.5 and/or PM10 emissions in the next submission of 2021.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2017 (4) | LT-1A4ciii-2017-0001 | No | 1A4ciii Agriculture/Forestry/Fishing: National Fishing, NH3, 1990-2015 | No | No | No |
| **Assessment of the implementation of the initial recommendation** For NH3 emissions from category 1A4ciii National Fishing the TERT noted that there is a lack of transparency regarding the fact that these emissions are included in the NFR 2020 table, as recommended in previous reviews, but no documentation of recalculations was included in IIR 2020. This does not relate to an over- or under-estimate of emissions. This was raised during the 2017, 2018 and 2019 NECD review. In response to a question raised during the review, Lithuania explained that NH3 emissions from category 1A4ciii were calculated using emission factors included in EEA Guidebook chapter (namely 1A3d - Navigation Shipping).  **The TERT recommends that Lithuania includes information on the calculation method of these emissions in IIR 2021.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2020 (1) | LT-1A4ciii-2020-0001 | No | 1A4ciii Agriculture/Forestry/Fishing: National Fishing, PM2.5, 2005, 2010, 2015, 2016, 2017, 2018 | N/A | No | No |
| **Recommendation** For category 1A4ciii National Fishing for the years 2005, 2010, 2015-2018 the TERT noted that there is a lack of transparency regarding the fact that PM2.5 estimate is larger than the estimate for PM10. This issue is below the threshold of significance. In response to a question raised during the review, Lithuania explained that this issue is an error and will be corrected in submission 2021.  **The TERT recommends that Lithuania corrects this issue and provide correct estimates for PM2.5 and/or PM10 emissions in the next submission of 2021.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2017 (4) | LT-1B1a-2017-0001 | No | 1B1a Fugitive Emission from Solid Fuels: Coal Mining and Handling, PM2.5, 1990-2018 | No | No | No |
| **Assessment of the implementation of the initial recommendation** For category 1B1a Fugitive Emission from Solid Fuels: Coal Mining and Handling for PM2.5 for all years the TERT noted that there is a lack of transparency regarding the activity data used. This does not relate to an over- or under-estimate of emissions. This was raised during the 2017, 2018 and 2019 NECD reviews. In response to a question raised during the review, Lithuania explained that the mass of coal was taken from fuel balance, and that the activity data for emission estimations (ha coal piles) was estimated, based on an expert judgement that coal is stored in 3 meter height heaps.  **The TERT recommends that Lithuania includes this information about the activity data in the IIR in the 2021 submission.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2020 (1) | LT-2A1-2020-0001 | Yes | 2A1 Cement Production, PM2.5, 2005 | N/A | No | No |
| **Recommendation** For category 2A1 Cement Production, for PM2.5 emissions, for the year 2005 the TERT notes with reference to Lithuania 2020 IIR, section 4.3, that a Tier 1 method is used for a key category. In response to a question raised during the review Lithuania answered that there was a mistake in the IIR and that a Tier 3 method is used since 2000 (and not since 2006).  **The TERT recommends that Lithuania corrects the IIR for the next submission.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2017 (4) | LT-2A2-2017-0001 | No | 2A2 Lime Production, PM2.5, 1990-2015 | No | No | No |
| **Assessment of the implementation of the initial recommendation** For category 2A2 Lime Production, for PM2.5 emissions, for the entire time series the TERT noted that there is a lack of transparency regarding the justification for use of the Tier 2 with abatement methodology. This does not relate to an over- or under-estimate of emissions. This was raised during the 2017, 2018 and 2019 NECD reviews. In response to a question raised during the review, Lithuania explained that further investigations will be made on the data from the operator and that the IIR chapter will be rewritten in 2021 submission.  **The TERT recommends that Lithuania justify in the 2021 IIR the use of the Tier 2 with abatement EF, and update the Tier used in the 2A2 IIR chapter.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2017 (4) | LT-2A3-2017-0001 | No | 2A3 Glass Production, PM2.5, 1990-2015 | No | No | No |
| **Assessment of the implementation of the initial recommendation** For category 2A3 Glass Production, for PM2.5 emissions, for the entire time series the TERT noted that there is a lack of transparency on the source for the activity data and the Tier method used in the 2020 IIR, and that recalculation has been made for the year 2017 without justification. This was raised during the 2017, 2018 and 2019 NECD reviews. In response to a question raised during the review Lithuania Tier 2 will be implemented in 2021 submission. The TERT noted that the issue is below the threshold of significance for a technical correction.  **The TERT recommends that Lithuania improves the description of the method and Tier used.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2017 (4) | LT-2B1-2017-0001 | No | 2B1 Ammonia Production, NMVOC, 2005-2018 | No | No | No |
| **Assessment of the implementation of the initial recommendation** For category 2B1 Ammonia Production, the TERT notes that the recommendation made during the 2019 NECD review has not been implemented yet according to the Lithuanian 2020 IIR. This was raised during the 2017, 2018 and 2019 NECD reviews. The TERT noted that the issue is below the threshold of significance for a technical correction. The 2020 review noted that the IIR states that the issue has been included in the list of improvements and that the recommendation will be addressed in the 2021 submission.  **The TERT reiterates the recommendation that Lithuania resolve the time series inconsistency for NMVOC estimates in its 2021 NFR.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2018 (3) | LT-2-2018-0002 | No | 2B10a Chemical Industry: Other, NMVOC, 2005-2017 | No | No | No |
| **Assessment of the implementation of the initial recommendation** For category 2B10a Chemical Industry: Other, for NMVOC emissions, for the years 2005-2017, the TERT noted there is no information regarding the methodology used to estimate NMVOC emissions from the acetate yarn production according to the IIR, and that NMVOC are reported 'NE' before 2005. This was raised during the 2018 and 2019 NECD reviews. In response to a question raised during the review Lithuania answered that a request will be sent to the company on a methodology in 2020. The TERT noted that the issue is related to non-mandatory years.  **The TERT recommends that Lithuania improves the description of the NMVOC estimates from the acetate yarn production in its 2021 IIR and estimates emissions for years 1990-2004 in its 2021 NFR.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2017 (4) | LT-2D3e-2017-0001 | No | 2D3e Degreasing, NMVOC, 2005, 2010, 2015, 2016, 2017, 2018 | No | No | No |
| **Assessment of the implementation of the initial recommendation** For category 2D3e Degreasing, for NMVOC emissions, for the years 2005, 2010, 2015-2018, the TERT noted that there is a lack of transparency regarding the new methodology applied and the source of the EF used for NMVOC estimates. This does not relate to an over- or under-estimate of emissions. This was raised during the 2017, 2018 and 2019 NECD reviews. In response to a question raised during the review, Lithuania explained that from 2002 data regarding solvent use for degreasing in point sources is collected into Product Register database in EPA, and used a Tier 2 method integrating pollution abatement technologies, based on the efficiency and implementation of expert-based technologies through time.  **The TERT recommends that Lithuania improves the IIR description regarding the methodology applied and the Tier used for NMVOC estimates in its 2021 IIR.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2017 (4) | LT-2D3f-2017-0001 | No | 2D3f Dry Cleaning, NMVOC, 1990-2017 | No | No | No |
| **Assessment of the implementation of the initial recommendation** For category 2D3f Dry Cleaning, for NMVOC emissions, for the years 1990-2017, the TERT noted that there is a lack of transparency regarding the methodology used, the Tier applied in the 2020 submission, the EFs used, and the recalculations made. This was raised during the 2017, 2018 and 2019 NECD reviews. In response to a question raised during the review Lithuania provided details on the knowledge of the sector, the activity data and abatement technologies, and Tiers applied. The TERT noted that the issue is below the threshold of significance for a technical correction.  **The TERT recommends that these details on the methodology used, the Tier applied, the EFs used through years, and the recalculations made between two inventory submissions must be clearly and fully included in the IIR for the next submission.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2017 (4) | LT-2D3g-2017-0001 | No | 2D3g Chemical Products, NMVOC, 1990-2018 | No | No | No |
| **Assessment of the implementation of the initial recommendation** For category 2D3g Chemical Products, for NMVOC emissions, for the entire time series, the TERT noted that there is a lack of transparency regarding the scope, the methodology, the Tier and the EF used for NMVOC estimates (section 4.24 of the IIR). This does not relate to an over- or under-estimate of emissions. This was raised during the 2017, 2018 and 2019 NECD reviews. In response to a question raised during the review, Lithuania explained that activity data from 2005 became available by Statistics Lithuania for processing, and that NMVOC Tier 2 EF for asphalt blowing, paint, ink, glues, shoes were applied with abatement provided in 2019 EMEP/EEA Guidebook. Regarding the 'NE' reported NMVOC emissions for years 1990-2004, Lithuania answered that they will estimate emissions for the next submission. The TERT notes that it relates to non-mandatory years.  **The TERT recommends that Lithuania improves the IIR description regarding the scope, the methodology, the Tier and the EF used for NMVOC estimates in its 2021 IIR and estimates NMVOC for the period 1990-2004 in its 2021 NFR.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2019 (2) | LT-2G-2019-0001 | No | 2G Other Product Use, PM2.5, 2016-2017 | No | No | No |
| **Assessment of the implementation of the initial recommendation** For category 2G Other Product Use, for pollutant PM2.5 and all years the TERT noted a potential over-estimate of emissions and that PM2.5 emissions are equal to PM10 emissions. This was raised during the 2019 NECD review when Lithuania provided a revised estimate to address the identified issue. In response to a question raised during the review Lithuania noted that they do not have sufficient resource to provide a revised estimate. The TERT noted that the issue is below the threshold of significance for a technical correction.  **The TERT recommends that Lithuania, as a minimum, implement the revised estimate from the 2019 NECD review in the 2021 submission and considers improving its methodology for estimating PM2.5 for 2G where possible.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2017 (4) | LT-3B-2017-0004 | Yes | 3B Manure Management, NH3, 2000-2018 | No | No | No |
| **Assessment of the implementation of the initial recommendation** For 3B Manure Management 1990-2018 the TERT noted that there is a lack of transparency regarding the calculation of the NH3 emission. The 2020 submitted IIR includes very little information on the key parameters used for calculation of the NH3 emission for 3B, with no information is given on N-excretion, manure systems or housing days. The lack of information makes it difficult to understand and evaluate the Lithuania NH3 inventory, and therefore is raised request for recalculation for the main 3B categories in other observations (LT-3B1a-2020-0001, LT-3B1b-2020-0001 and LT-3b3-2020-0001). The currents observation focuses only on transparency due to lack of information mentioned above, and thus, does not relate to an over- or under-estimate of emissions. This issue of poor transparency was raised during the 2017, 2018 and 2019 NECD reviews. In response to a question raised during the 2020 review, Lithuania provided a excel sheet showing the N-excretion, and allocation of manure system for dairy cattle.  **The TERT recommends that Lithuania include information for N-excretion, manure management system and housing days for all 3B animal categories for the next submission. In the work to improve the transparency, the TERT recommend Lithuania use other comparable countries IIR report as inspiration.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2019 (2) | LT-3B-2019-0001 | Yes | 3B Manure Management, NMVOC, 2000-2017 | No | No | Yes |
| **Assessment of the implementation of the initial recommendation** The TERT notes with reference to NMVOC emissions of 3B Manure Management and IIR Table 45 that Lithuania uses the Tier 1 methodology for 3B1a Dairy Cattle, 3B1b Non-Dairy Cattle, which are key source categories for all years and for 3B4h which are key source for year 2015, when a Tier 2 methodology should be used. This was also raised during the 2019 NECD review (LT-3B-2019-0001). In response to the question raised Lithuania confirmed that a Tier 2 NMVOC calculation will be provided. This issue is considered as above the threshold of significance.  **The TERT reiterates the recommendation that a Tier 2 NMVOC calculation for 3B1a, 3B1b and 3B4h should be estimated. For a Tier2 calculation data for feed intake is needed (refer to CRF Table 3A), percentage of silage feeding, housing days and data for NH3 emission from housing, storage and application.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2018 (3) | LT-3-2018-0001 | No | 3B Manure Management, PM2.5, 1990-2016 | No | No | No |
| **Assessment of the implementation of the initial recommendation** For category 3B Manure Management, pollutant PM2.5 the TERT noted that there is a lack of transparency regarding the implementation of finding LT-3-2018-0001. This does not relate to an over- or under-estimate of emissions. This was raised during the 2018 and 2019 NECD review. The TERT have checked the IEF, which seems to match the Tier 1 emission factor, which indicate that this issue is below the threshold of significance. However, no information is included in the IIR regarding the time period that livestock spend outside and inside, which is information needed to estimate the PM2.5 emission. In response to a question raised during the review, Lithuania confirmed that a table showing the housing/grassing days for each 3B categories will be included in the IIR for the next submission in 2021.  **The TERT recommends that Lithuania include information for housing/grassing days used in the calculation of the PM2.5 emission from 3B.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2020 (1) | LT-3Da1-2020-0002 | Yes | 3Da1 Inorganic N-Fertilizers, NOX, 1990-2018 | N/A | No | No |
| **Recommendation** The TERT notes with reference to 3Da1 Inorganic N-Fertilizers, NO2 emissions and IIR Chapter 5.4.2, that Lithuania convert the default Tier 1 with 44/30, which is not needed because the EF in EMEP/EEA Guidebook 3D Table 3.1 is given in kg NO2 per kg N applied. This leads to an overestimation of the NO2 emission, but the TERT considered that the issue is below the threshold of significance for a technical correction.  **In response to a question raised during the Lithuania confirm to correct the NO2 EF to the default given in in the 2019 EMEP/EEA Guidebook Table 3.1, for the submission 2021, as recommended by the TERT.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2017 (4) | LT-3Da2a-2017-0001 | Yes | 3Da2a Animal Manure Applied to Soils, NOX, 2005, 2010, 2015 | No | No | No |
| **Assessment of the implementation of the initial recommendation** The TERT notes with reference to NO2 emission from 3Da2a Animal Manure Applied to Soils years 1990-2018 that there may be an over-estimate of emissions, because activity data (N in manure applied) is significant higher that reported in CRF (Table 3D) and because Lithuania had use a conversion (from NO2-N to NO2), which is not needed by using the 2019 EMEP/EEA Guidebook default. The calculation of NOX emission from 3DA2a was raised during the 2017, 2018 and 2019 NECD reviews, whit focus on lack of transparency. In response to the question raised Lithuania explained that the NO2 emission was based on a Tier2 calculation, which makes the use of NO2 default irrelevant.  **The TERT recommends that Lithuania checks the Tier2 NO2 calculation for 3Da2a and to ensure that activity data is in accordance with activity data in CRF (Table 3D) or explain why there is a difference between activity data in NFR and CRF submission.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2020 (1) | LT-3Da3-2020-0001 | Yes | 3Da3 Urine and Dung Deposited by Grazing Animals, NOX, 2000-2017 | N/A | No | No |
| **Recommendation** The TERT notes a significant recalculation has been applied (>10% change) for the key category 3Da3 Urine and Dung Deposited by Grazing Animals for the pollutant NOX and years 2000-2017 and no explanation is included in the IIR. In response to a question raised during the review Lithuania informed that a Tier 2 calculation was provided but did not provide any data or information due to the NOX calculation. The TERT noted that the issue is related to a non-mandatory category.  **The TERT recommends that Lithuania provide more information in IIR for next submission 2021 showing the key parameters used in the NOX Tier 2 calculation, as N-excretion, allocation on manure system and housing days.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2020 (1) | LT-3De-2020-0001 | Yes | 3De Cultivated Crops, NMVOC, 2005-2018 | N/A | No | Yes |
| **Recommendation** The TERT notes that 3De Cultivated Crops NMVOC is a key category and thus should be estimated using a Tier 2 approach (refer to the 2019 EMEP/EEA Guidebook, 3D, Table 3.3). For a Tier2 calculation national data for cultivated area (wheat, rye, rape, grass and other), crop yield (amount and dry matter fraction) is needed but not available. The TERT consider this issue to be below threshold of significance. In response to a question raised during the review Lithuania stated that they plan to compile a Tier2 estimate for NMVOC for 3De for reporting in the 2021 submission. However, Lithuania have to be aware of that the 2016- and 2019 EMEP/EEA Guidebook 3D are known to have a unit error (first column of Table 3.3 and all of Table 3.4). The units for NMVOC EFs are presented as “kg NMVOC per ha”, which should be “kg NMVOC per hour”. This issue will be added to the EMEP/EEA Guidebook errata which will be published before the next submission.  **The TERT recommends that Lithuania implement this Tier2 calculation for NMVOC emission from 3De for the next submission and fully documents its methods, assumptions, and data sources in its IIR.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2020 (1) | LT-5A-2020-0001 | No | 5A Biological Treatment of Waste - Solid Waste Disposal on Land, PM2.5, 1990-2018 | N/A | No | No |
| **Recommendation** For PM2.5 emissions from 5A Solid Waste Disposal on Land on for all years, the TERT noted the Activity Data (AD) applied for the estimation of PM2.5 emissions is the same as for the estimation of NMVOC emissions, whereas the total amount of waste handled (including the amount of mineral waste , such as construction and demolition, ash etc.) should have been applied to estimate PM2.5 emissions. In response to a question raised during the review, Lithuania agreed and indicated that it will be corrected in the 2021 submission. The TERT noted that the issue is below the threshold of significance for a technical correction.  **The TERT recommends that Lithuania correct its estimate of PM2.5 emissions from 5A using the total amount of waste generated as AD.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2020 (1) | LT-5B2-2020-0001 | No | 5B2 Biological Treatment of Waste - Anaerobic Digestion at Biogas Facilities, NH3, 1990-2018 | N/A | No | No |
| **Recommendation** NH3 emissions from 5B2 Biological Treatment of Waste - Anaerobic Digestion at Biogas Facilities and for all years, the TERT noted that the equation presented page 185 of the 2020 IIR, which is supposed to be an application of the 2019 EMEP/EEA Guidelines methodology, is not consistent with the equation 1, page 7 of the chapter 5.B.2 Biological treatment of waste –anaerobic digestion at biogas facilities of the 2019 EMEP/EEA Guidelines. In response to a question raised during the review Lithuania indicated that the methodological description will be improve in the next submission. The TERT was not able to check the current methodology. However, the TERT noted that the issue is below the threshold of significance for a technical correction.  **The TERT recommends that Lithuania include a better description of the methodology, including the correct equation and information on AD and EF.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2019 (2) | LT-5D3-2019-0001 | No | 5D Wastewater Treatment, NH3, 2000-2017 | No | No | No |
| **Assessment of the implementation of the initial recommendation** For NH3 emissions from 5D Wastewater Treatment and all years, the TERT noted that there is a lack of transparency regarding the allocation of emissions from latrines. Indeed, according to the 2016 EMEP/EEA Guidebook, emissions from latrine are to be included in category 5D1 Domestic Wastewater Handling, whereas it is reported under 5D3 in the Lithuanian submission. This does not relate to an over- or under-estimate of emissions. This was raised during the 2019 NECD review. In response to a question raised during the review, Lithuania agreed and explained that the reallocation is planned in improvement plan for the 2021 submission.  **The TERT recommends that Lithuania reallocate NH3 emissions from latrines in NFR 5.D.1 in the 2021 submission.** | | | | | | |

# Findings and conclusions from the technical expert review team for the follow-up review of national emission inventories of POPs and heavy metals

1. The technical expert review team assessed the implementation of findings from the NECD Review 2019. This assessment was based on the emission inventory submitted under the NECD in 2020 by Lithuania pursuant to Directive (EU) 2016/2284 and their review report from the NECD Review 2019.
2. Resubmissions and other additional information provided by Lithuania during the review were taken into account until 1 May 2020.
3. Table 5 gives an overview of the number of recommendations, revised estimates, technical corrections and unquantified potential technical corrections for heavy metals and POPs that are included in Table 6. It also indicates in which NECD Review these findings were raised for the first time. Further, it shows how many findings have been implemented by Lithuania with their inventory submission 2020. The table also shows the range of recommendations, revised estimates, technical corrections and unquantified potential technical corrections that were included in the NECD Review reports for other Member States and the UK.
4. Table 6 provides all the recommendations, revised estimates, technical corrections and unquantified potential technical corrections from the technical expert review team related to POPs and HMs including those additionally made during the NECD Review 2020 and those not implemented from the NECD Review 2019.

Table 5: Overview of the number of findings from the NECD Review 2020 and previous NECD reviews related to POPs and HMs

|  | | Findings included in the 2020 Review Report by year of origin (see Table 6 below) | | | | Implemented findings |
| --- | --- | --- | --- | --- | --- | --- |
| TC\* | RE\* | UPTC\* | Recom.\* |
| Finding first raised in: | NECD Review 2017 | 0 | 0 | 0 | 2 | 0 |
| NECD Review 2018 | 1 | 2 | 0 | 2 | 2 |
| NECD Review 2019 | 0 | 0 | 1 | 4 | 8 |
| NECD Review 2020 | 1 | 0 | 0 | 2 | n/a |
| Total from NECD Review 2020 | | 2 | 2 | 1 | 10 |  |
| (Range for All Member States and the UK) | | **(0-2)** | **(0-5)** | **(0-2)** | **(1-20)** |

\* TC = Technical Correction, RE = Revised Estimate, UPTC = Unquantified Potential Technical Correction, Recom. = Recommendation

Table 6: All recommendations, revised estimates, technical corrections and unquantified potential technical corrections including those additionally made during the NECD Review 2020 and those not implemented from previous reviews, for heavy metals and POPs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2018 (3) | LT-2G-2018-0001 | No | 2G Other Product Use, Pb, 2016 | TC | TC | No |
| **Assessment of the implementation of the initial recommendation** For category 2G Other Product Use for pollutant Pb in all years the TERT noted an under-estimate of emissions above the threshold of significance. Pb emissions from 2G are reported as 'NA' for all years while the 2016 EMEP/EEA Guidebook has an emission factor for the use of fireworks. This was raised during the 2018 and 2019 NECD review. Lithuania did not provide a detailed response to questions raised during the review or provide a revised estimate. The TERT decided to calculate a technical correction for the years 1990, 2005, 2016-18 which was accepted by Lithuania. The estimates demonstrate that the issue is above the threshold of significance.  **The TERT recommends that Lithuania include a revised estimate in its next submission.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2020 (1) | LT-5C2-2020-0001 | No | 5C2 Open Burning of Waste, PAHs, 1990-2018 | N/A | TC | No |
| **Recommendation** For PAHs emissions from 5C2 Open Burning for all years, the TERT noted that in response to a question raised during the review Lithuania did not provide a revised estimate. The TERT decided to calculate a technical correction for the 1990, 2005, 2016- 2018 which was accepted by Lithuania. The estimates demonstrate that the issue is above the threshold of significance.  **The TERT recommends that Lithuania include a revised estimate in its next submission.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2018 (3) | LT-1A3bvi-2018-0002 | Yes | 1A3bvi Road Transport: Automobile Tyre and Brake Wear, Pb, 2016 | TC | RE | Yes |
| **Assessment of the implementation of the initial recommendation** For 1A3bvi Road Transport: Automobile Tyre and Brake Wear, for pollutant Pb, for all years, the TERT noted an underestimation of emissions. In response to a question raised during the review, Lithuania explained that is planning to correct this issue in 2021 submission and provided revised estimates for years 1990, 2005, 2016-2018. The TERT agreed with the revised estimate provided by Lithuania.  **The TERT recommends that Lithuania include the revised estimate in its 2021 NFR and IIR submission.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2018 (3) | LT-1B2aiv-2018-0001 | No | 1B2aiv Fugitive Emissions Oil: Refining / Storage, Cd, Hg, Pb, 1990, 2005, 2016 | TC | RE | No |
| **Assessment of the implementation of the initial recommendation** For 1B2aiv Fugitive Emissions Oil: Refining / Storage for Cd, Hg and Pb in 1990, 2005 and 2016-2018 the TERT noted that Cd, Hg and Pb are reported as 'NE' in the NFR, and that the 2016 EMEP/EEA Guidebook include Tier 1 emission factors for these pollutants. This was raised during 2018 and 2019 NECD review. In response to a question raised during the review, Lithuania agreed to the draft technical correction provided by the TERT and stated that it will be included in the next submission.  **The TERT recommends that Lithuania include the revised estimate in its 2021 NFR and IIR submission.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2019 (2) | LT-1A2gvii-2019-0003 | No | 1A2gvii Mobile Combustion in Manufacturing Industries and Construction, Pb, 1990-2018 | No | UPTC | No |
| **Assessment of the implementation of the initial recommendation** The TERT notes with reference to category 1A2gvii Mobile Combustion in Manufacturing Industries and Construction, for Pb emissions, for the whole time series after 1996 an issue that may relate to an under-estimate of emissions. This under-estimate may have an impact on total emissions that is above the threshold of significance. Lithuania has not provided a revised estimate which has been accepted by the TERT. It is currently not possible for the TERT to provide a numerical emission estimate based on a Tier 1/Tier 2 method, and therefore the issue will be flagged as Potential Technical Correction and will be assessed as a high priority item in future reviews.  **The TERT recommends that Lithuania should calculate Pb emissions from 1A2gvii category for inclusion in next years’ inventory submission.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2020 (1) | LT-0A-2020-0001 | No | 0A National Total - National Total for the Entire Territory - Based on Fuel Sold/Fuel Used, SO2, NOX, NH3, NMVOC, PM2.5, BaP, PAHs, PCBs, HCB, Pb, PCDD/F, PM10, CO, BC, 1990 - 2018 | N/A | No | No |
| **Recommendation** For uncertainties in the entire inventory the TERT noted that there is a lack of transparency regarding the methods, data sources and assumptions used to estimate uncertainties. This does not relate to an over- or under-estimate of emissions. In response to a question raised during the review, Lithuania explained that an improved description of the methods, data sources and assumptions would be provided in the 2021 IIR.  **The TERT recommends that Lithuania includes, in future IIRs, details of the methods, data sources and assumptions used to derive its uncertainty estimates.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2018 (3) | LT-1A1a-2018-0001 | Yes | 1A1a Public Electricity and Heat Production, Cd, 1990, 2005, 2016, 2017, 2018 | No | No | No |
| **Assessment of the implementation of the initial recommendation** For 1A1a Public Electricity and Heat Production, Cd, in years 1990, 2005, 2016-2018 the TERT noted that there is a lack of transparency regarding the methodology used for calculating the emissions in the IIR. This does not relate to an over- or under-estimate of emissions. This was raised during the 2018 and 2019 NECD reviews. In response to a question raised during the review, Lithuania explained that the abatement efficiencies have been re-estimated based on the Tier 2 study performed, and Lithuania provided the re-estimated abatement efficiencies and a summary of the reports of the national EF research (included in Lithuania’s answer to observation LT-1A4ci-2019-0003.  **The TERT recommends that Lithuania include in the IIR an explanation of the methodology including a description of the re-estimated abatement efficiencies.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2020 (1) | LT-1A1a-2020-0001 | Yes | 1A1a Public Electricity and Heat Production, Cd, NOX, PM2.5, SO2, 2000-2017 | N/A | No | No |
| **Recommendation** For 1A1a Public Electricity and Heat Production, for Cd, NOX, PM2.5 and SO2, in years 2000-2017 the TERT noted that there is a lack of transparency regarding recalculations. This does not relate to an over- or under-estimate of emissions. In response to a question raised during the review, Lithuania explained that re-estimated abatement efficiencies were applied for Cd and PM2.5 and that the NOX EF 210 g/GJ for wood in boilers < 50 MW was applied.  **The TERT recommends that Lithuania include in the 2021 IIR descriptions of any recalculation in the Energy sector.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2019 (2) | LT-1A1a-2019-0001 | Yes | 1A1a Public Electricity and Heat Production, Hg, Pb, NOX, 2000, 2001, 2002, 2003, 2004, 2005, 2016 | No | No | No |
| **Assessment of the implementation of the initial recommendation** For 1A1a Public Electricity and Heat Production, for Hg, Pb and NOX, for all years the TERT noted that there is a lack of transparency regarding explaining recalculations. This does not relate to an over- or under-estimate of emissions. This was raised during the 2019 NECD review. In response to a question raised during the review, Lithuania explained that the abatement efficiencies have been re-estimated based on the Tier 2 study performed, and Lithuania provided the re-estimated abatement efficiencies and a summary of the reports of the national EF research.  **The TERT recommends that Lithuania include in the IIR an explanation of the methodology including a description of the re-estimated abatement efficiencies, and a description of any recalculations.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2019 (2) | LT-1A2gviii-2019-0001 | Yes | 1A2gviii Stationary Combustion in Manufacturing Industries and Construction: Other, Cd, 2016 | No | No | No |
| **Assessment of the implementation of the initial recommendation** For category 1A2gviii Stationary Combustion in Manufacturing Industries and Construction: Other, for PM2.5 for all years the TERT noted that there is a lack of transparency regarding information and explanation on the sector (i.e. the methodology used, activity data and emission factors used). Only a comment referring to the use of default 2019 EMEP/EEA Guidebook factors is included in the IIR (page 72 of the IIR). This does not relate to an over- or under-estimate of emissions. This was raised during the 2019 NECD review. In response to a question raised during the review, Lithuania explained that the abatement efficiencies that is applied have been recalculated and provided the new abatement efficiencies.  **The TERT reiterates the recommendation from the 2019 review to add an explanation on the sector to the IIR.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2017 (4) | LT-1A3b-2017-0006 | Yes | 1A3b Road Transport, SO2, NOX, NH3, NMVOC, PM2.5, BaP, PAHs, PCBs, HCB, Cd, Hg, Pb, PCDD/F, PM10, CO 1990-2018 | No | No | No |
| **Assessment of the implementation of the initial recommendation** For category 1A3b Road Transport, for all fuels and pollutants the TERT noted that there is a lack of transparency regarding the fact that in IIR 2020, in page 78/256, in figure 51 FUEL CONSUMPTION IN ROAD TRANSPORT IN 1990-2018, TJ, the following fuels are depicted: LPG, CNG, Gasoline and Diesel. Whereas in the file that Lithuania provided in observation: LT-1A3b-2017-0002, the fuels reported in COPERT are petrol, diesel, petrol hybrid and LPG biofuel. This does not relate to an over- or under-estimate of emissions. This was raised during the 2017, 2018 and 2019 NECD reviews. In response to a question raised during the review, Lithuania explained that emissions from CNG are included, but CNG is not reported in activity data column.  **The TERT recommends that Lithuania provides a clear explanation in 2021 NFR and IIR on which fuels are considered for road transport.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2019 (2) | LT-1A4ai-2019-0002 | Yes | 1A4ai Commercial/Institutional: Stationary, PCBs, 2016 | No | No | No |
| **Assessment of the implementation of the initial recommendation** For category 1A4ai Commercial/Institutional: Stationary for PCBs for the year 2016 the TERT noted that there is a lack of transparency regarding the EFs for PCBs and PM10 and the different ratio of PCBs to PM10 emissions. This does not relate to an over- or under-estimate of emissions. This was raised during the 2019 NECD review. In response to a question raised during the review, Lithuania explained that abatement for PM and pollutants attached to PM (HM, PAHs, DX/FR) was applied. Because PCBs are not associated with PM, for them abatement was not applied. Lithuania provided a spreadsheet with the re-estimated abatement efficiencies.  **The TERT reiterates the recommendation from the 2019 review that Lithuania includes both a clear explanation of the emission factors and abatement efficiencies applied, and information about recalculations for this sector in the 2021 IIR submission.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2017 (4) | LT-1A4bii-2017-0001 | Yes | 1A4bii Residential: Household and Gardening (Mobile), SO2, NOX, NH3, NMVOC, PM2.5, BaP, PAHs, PCBs, HCB, Cd, Hg, Pb, PCDD/F, PM10, CO, 1990-2018 | No | No | No |
| **Assessment of the implementation of the initial recommendation** For category 1A4bii Residential: Household and Gardening (Mobile), for all fuels and pollutants, for 2010-2018 the TERT noted that there is a lack of transparency regarding the fact that in tables in IIR 2020, in tables 35 and 36 fuel consumption for this category is included and in tables 26, 27 and 28 Tier 2 emissions factors are presented, whereas in NFR 2020 table corresponding emissions are still reported as 'NO'. This does not relate to an over- or under-estimate of emissions since emissions are reported under other NFR categories (such as 1A4aii and 1A4cii). This was raised during the 2017, 2018 and 2019 NECD reviews. In response to a question raised during the review, Lithuania explained that activity data included in the aforementioned tables refer to NFR categories 1A4aii and 1A4cii and that for category 1A4bii diesel fuel was used only until 1995. After 1995 mostly electric equipment is used.  **The TERT recommends that Lithuania provides a thorough explanation of this issue in the 2021 IIR submission and correct the tables accordingly in order to reflect to which category the activity data refer to.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2019 (2) | LT-1A4ci-2019-0003 | No | 1A4ci Agriculture/Forestry/Fishing: Stationary, PCDD/F, PCBs, 1990-2018 | No | No | No |
| **Assessment of the implementation of the initial recommendation** For 1A4ci Agriculture/Forestry/Fishing: Stationary, for PCDD/F, PCBs, in all years the TERT noted that there is a lack of transparency regarding recalculations. This does not relate to an over- or under-estimate of emissions. In response to a question raised during the review, Lithuania provided abatement data and a summary of the national EF research report. Lithuania clarified that the abatement efficiencies are used for 1A1a as no better information is available, and as the sample of the LSC project was not big enough to distinguish among different sectors.  **The TERT commends Lithuania for providing a summary in English of the national EF research report and recommends that Lithuania include this information in the IIR to improve transparency. Further, the TERT recommends that Lithuania include in the 2021 IIR a detailed description of recalculations.** | | | | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | Key Category | NFR, Pollutant(s), Year(s) | RE, TC, or UPTC in 2019 | RE, TC, or UPTC in 2020 | Tier 1 used for Key Category |
| 2018 (3) | LT-2D3g-2018-0002 | No | 2D3g Chemical Products, NMVOC, PAHs, 1990-2018 | No | No | No |
| **Assessment of the implementation of the initial recommendation** For category 2D3g Chemical Products and pollutants PAHs for all years, the TERT noted that emissions are reported as 'NA' and that there is a lack of transparency in the IIR concerning the activities covered by category 2D3g. This was raised during the 2018 and 2019 NECD reviews. In response to a question raised during the review Lithuania provided some clarification on emissions of NMVOC but did not address the PAH emissions. The TERT noted that the issue is below the threshold of significance for a technical correction.  **The TERT reiterates the recommendation that Lithuania updated the notation key for PAHs emissions and clearly describes in which NFR category emissions from asphalt blowing emissions are accounted for, what methodology has been used and to clearly document this in the IIR in its next submission. The TERT also recommends that where possible Lithuania presents emissions for PAH by species for relevant categories and subcategories including 2D3g.** | | | | | | |

# Findings and conclusions from the technical expert review team for the LPS data

1. The technical expert review team performed an in-depth review of the LPS data submitted by 1 May 2017. Resubmissions up until 15 May 2020 were taken into account for the review. Additional information provided by Lithuania during the review was taken into account until 15 May 2020.
2. The technical expert review team carried out checks to verify the transparency, accuracy, consistency, comparability and completeness of the most recent submission of LPS data for the year 2015. The technical expert review team used submitted LPS data for the years 2016-2018 as a cross-check only.
3. Table 7 gives an overview of the number of recommendations, revised estimates and unquantified potential technical corrections for the gridded data that are included in Table 8. The table also shows the range of recommendations, revised estimates and unquantified potential technical corrections that were included in the NECD review reports for other Member States and the UK.
4. Table 8 provides all the recommendations from the technical expert review team related to the LPS data including revised estimates and unquantified potential technical corrections. Technical Corrections were not applied during the review of the LPS data. The implementation of the recommendations will be followed-up in the NECD review 2021.

Table 7: Overview of the number of findings from the NECD Review 2020 related to LPS data

|  | Findings included in the 2020 Review Report by year of origin (see Table 8 below) | | |
| --- | --- | --- | --- |
| RE\* | UPTC\* | Recom.\* |
| Total from NECD Review 2020 | 0 | 1 | 2 |
| (Range for All Member States and the UK) | (0-13) | (0-7) | (1-26) |

\* RE = Revised Estimate, UPTC = Unquantified Potential Technical Correction, Recom. = Recommendation

Table 8: All recommendations, revised estimates and unquantified potential technical corrections made during the NECD Review 2020 for LPS data

|  |  |  |  |
| --- | --- | --- | --- |
| Review year of initial recommendation (number of years it has been recommended) | Observation | GNFR sector, Pollutant(s), Year(s) | RE or UPTC in 2020 |
| 2020 (1) | LT-LPS-GEN-2020-0001 | General, PM2.5, PAHs, PCBs, HCB, Cd, Hg, Pb, PCDD/F, 2015 | UPTC |
| **Recommendation** The TERT noted that no LPS emissions are reported for PAHs, Hg, Cd, Pb, PCBs, PM2.5, HCB, PCDD/F in the year 2015. The TERT notes the discussion already held throughout the review with Lithuania on the difficulties with making a corrected estimate and notes that it is currently not possible for the TERT to provide a numerical emission estimate for Large Point Sources.  **The TERT recommends that Lithuania provide LPS estimates for its future submissions for facilities that are expected to emit over the threshold for LPS as defined in the reporting guidance, reconciles these with its national totals and gridded estimates and fully documents its methods assumptions and data sources in its IIR.** | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | GNFR sector, Pollutant(s), Year(s) | RE or UPTC in 2020 |
| 2020 (1) | LT-LPS-D-2020-0001 | D Fugitive, 2015 | No |
| **Recommendation** For GNFR code D\_Fugitive in 2015 the TERT noted that there is a lack of transparency regarding reporting of LPS emissions. The TERT notes that for the year 2015, emissions are reported for NFR code 1B2aiv Fugitive Emissions Oil: Refining/Storage in the national inventory but not for GNFR code D\_Fugitive in the LPS submission. The TERT would expect emissions to be reported for this GNFR given that emissions are reported for these source categories in the national inventory. This does not relate to an over- or under-estimate of emissions. In response to a question raised during the review, Lithuania explained that the refinery reports VOC emissions including methane to the E-PRTR, which cannot be used for LPS reporting. Lithuania informs that the refinery has clarified that the VOC emissions include methane and following Lithuania will subtract methane reported for this sector in the GHG inventory for the 2021 submission.  **The TERT recommends that Lithuania estimate NMVOC emissions based on the refinery’s VOC emissions reported to the E-PRTR and the methane emissions from Lithuania’s GHG emission inventory, and report the NMVOC emissions in the GNFR category D\_Fugitive in the LPS reporting in the 2021 submission.** | | | |
| Review year of initial recommendation (number of years it has been recommended) | Observation | GNFR sector, Pollutant(s), Year(s) | RE or UPTC in 2020 |
| 2020 (1) | LT-LPS-K-2020-0001 | K Agriculture Livestock, NH3, 2015 | No |
| **Recommendation** The TERT notes that that for the year 2015, NH3 emissions are not reported for the following LPS with the GNFR code K\_AgriLivestock: UAB 'Baltic Premator Klaipeda' (Industry), UAB 'Šilputa' (Farm), and the TERT would generally expect emissions of this pollutant to occur at levels above the reporting threshold from LPS for this GNFR. In response to a question raised during the review, Lithuania explained that the facility mentioned above belong to GNFR code B\_Industry.  **The TERT recommends that Lithuania investigate the facilities are correctly allocated according to their main activity and to correct the GNFR code for the next submission if necessary.** | | | |

# Findings and conclusions from the technical expert review team for gridded data

1. The technical expert review team performed an in-depth review of the gridded data submitted by 1 May 2017. Resubmissions up until 15 May 2020 were taken into account for the review. Additional information provided by Lithuania during the review was taken into account until 15 May 2020.
2. The technical expert review team carried out checks to verify the transparency, accuracy, consistency, comparability and completeness of the most recent submission of gridded data for the year 2015. The technical expert review team used submitted gridded data for the years 2016-2017 as a cross-check only.
3. Table 9 gives an overview of the number of recommendations and unquantified potential technical corrections for the gridded data that are included in Table 10. The table also shows the range of recommendations and unquantified potential technical corrections that were included in the NECD review reports for other Member States and the UK.
4. Table 10 provides all the recommendations from the technical expert review team related to the gridded data including unquantified potential technical corrections. Revised Estimates and Technical Corrections were not applicable to the review of the gridded data. The implementation of the recommendations will be followed-up in the NECD review 2021.

Table 9: Overview of the number of findings from the NECD review 2020 related to gridded data

|  | Findings included in the 2020 Review Report by year of origin (see Table 10 below) | |
| --- | --- | --- |
| UPTC\* | Recom.\* |
| Total from NECD Review 2020 | 0 | 1 |
| (Range for All Member States and the UK) | (0-8) | (0-6) |

\* PTC = Unquantified Potential Technical Correction, Recom. = Recommendation

Table 10: All recommendations and unquantified potential technical corrections made during the NECD Review 2020 for gridded data

|  |  |  |  |
| --- | --- | --- | --- |
| Review year of initial recommendation (number of years it has been recommended) | Observation | GNFR sector, Pollutant(s), Year(s) | UPTC in 2020 |
| 2020 (1) | LT-GRID-GEN-2020-0001 | General, SO2, NOX, NH3, NMVOC, PM2.5, 2015 | No |
| **Recommendation** For 2015 the TERT noted that there is a lack of transparency regarding gridded emissions and also there appears to be a lack of appropriate distributions for GNFR sectors. This does not relate to an over- or under-estimate of emissions but does relate to an inaccurate representation of the distribution of emissions. In response to a question raised during the review, Lithuania explained that some methods used in the gridding of emissions were inappropriate and that improvements will be made in the next submission.  **The TERT recommends that Lithuania makes improvements to the gridding methods for the 2021 submission with distributions that reflect activities in all relevant GNFR sectors for all pollutants and also provides a chapter in the IIR outlining the methods used to generate all of the gridded estimates.** | | | |

# Effect of revised estimates, technical corrections and adjustments recommended to be approved on the national total and national total for compliance

1. The tables below show the direct changes in response to the NECD Review 2020. These changes include all revised estimates, technical corrections and adjustment assessments. The tables also show the impact that these changes have on the National total (row 141, Annex I) and National Total for Compliance (row 154, Annex I). The National Emission Ceilings as defined by Directive 2001/81/EC [[6]](#footnote-6) are provided in the tables for reference.

Table 11: National totals as reported and national totals including revised estimates (RE) and technical corrections (TC) for NOX, NMVOC, SO2, NH3, PM2.5  and National Emission Ceilings[[7]](#footnote-7) [[8]](#footnote-8)

| **Description** | **Reference** | **Pollutant estimates (kt)** | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **2005** | **2010** | **2015** | **2016** | **2017** | **2018** |
| **NOX** | | | | | | | |
| National total (row 141) | Annex I, 25/02/2020 | 68.453 | 64.743 | 61.824 | 61.269 | 57.658 | 58.138 |
| National Total for Compliance (row 154) | Annex I, 25/02/2020 | 53.478 | 64.743 | 61.824 | 61.269 | 57.658 | 58.138 |
| 2010 National Emission Ceiling | | n/a | 110.000 | 110.000 | 110.000 | 110.000 | 110.000 |
| **NMVOC** | | | | | | | |
| National total (row 141) | Annex I, 25/02/2020 | 55.741 | 52.518 | 44.626 | 44.569 | 42.843 | 42.596 |
| National Total for Compliance (row 154) | Annex I, 25/02/2020 | 41.927 | 52.518 | 44.626 | 44.569 | 42.843 | 42.596 |
| **Difference between original estimate and revised estimate provided by Lithuania and accepted by the TERT** | | | | | | | |
| 1A3bv Road Transport: Gasoline Evaporation | LT-1A3bv-2017-0001 | - | 0.260 | 1.022 | 0.764 | 0.718 | 0.716 |
| **Difference between original estimate and technical correction deemed necessary by the TERT** | | | | | | | |
| 5A Biological Treatment of Waste - Solid Waste Disposal on Land | LT-5A-2019-0002 | -1.433 | -1.390 | -0.707 | -0.318 | -0.134 | -0.213 |
| National total (row 141) including revised estimates and technical corrections accepted by Lithuania (calculated using data above) | | 54.308 | 51.388 | 44.942 | 45.015 | 43.428 | 43.098 |
| National Total for Compliance (row 154) estimate including revised estimates, technical corrections accepted by Lithuania and adjustments recommended (by technical expert review team) to be accepted by EC (calculated using data above) | | 40.494 | 51.388 | 44.942 | 45.015 | 43.428 | 43.098 |
| 2010 National Emission Ceiling | | n/a | 92.000 | 92.000 | 92.000 | 92.000 | 92.000 |
| **SO2** | | | | | | | |
| National total (row 141) | Annex I, 25/02/2020 | 27.407 | 18.082 | 15.012 | 14.944 | 12.730 | 12.776 |
| National Total for Compliance (row 154) | Annex I, 25/02/2020 | 27.407 | 18.082 | 15.012 | 14.944 | 12.730 | 12.776 |
| 2010 National Emission Ceiling | | n/a | 145.000 | 145.000 | 145.000 | 145.000 | 145.000 |
| **NH3** | | | | | | | |
| National total (row 141) | Annex I, 25/02/2020 | 37.307 | 36.779 | 38.925 | 38.329 | 39.363 | 38.890 |
| National Total for Compliance (row 154) | Annex I, 25/02/2020 | 37.307 | 36.779 | 38.925 | 38.329 | 39.363 | 38.890 |
| **Difference between original estimate and revised estimate provided by Lithuania and accepted by the TERT** | | | | | | | |
| 3B1a Manure Management - Dairy Cattle | LT-3B1a-2020-0001 | 1.366 | 1.300 | 1.224 | 1.148 | 1.103 | 1.202 |
| 3B3 Manure Management - Swine | LT-3B3-2020-0001 | 0.990 | 0.744 | 0.592 | 0.592 | 0.553 | 0.500 |
| **Difference between original estimate and technical correction deemed necessary by the TERT** | | | | | | | |
| 3B1b Manure Management - Non-Dairy Cattle | LT-3B1b-2020-0001 | 0.930 | 1.059 | 1.263 | 1.273 | 1.275 | 1.304 |
| National total (row 141) including revised estimates and technical corrections accepted by Lithuania (calculated using data above) | | 40.593 | 39.883 | 42.004 | 41.342 | 42.294 | 41.895 |
| National Total for Compliance (row 154) estimate including revised estimates, technical corrections accepted by Lithuania and adjustments recommended (by technical expert review team) to be accepted by EC (calculated using data above) | | 40.593 | 39.883 | 42.004 | 41.342 | 42.294 | 41.895 |
| 2010 National Emission Ceiling | | n/a | 84.000 | 84.000 | 84.000 | 84.000 | 84.000 |
| **PM2.5** | | | | | | | |
| National total (row 141) | Annex I, 25/02/2020 | 9.225 | 7.851 | 5.484 | 5.413 | 6.014 | 5.784 |
| National Total for Compliance (row 154) | Annex I, 25/02/2020 | 9.225 | 7.851 | 5.484 | 5.413 | 6.014 | 5.784 |
| **Difference between original estimate and revised estimate provided by Lithuania and accepted by the TERT** | | | | | | | |
| 1A3ei Pipeline Transport | LT-1A3ei-2017-0001 | 0.001 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| **Difference between original estimate and technical correction deemed necessary by the TERT** | | | | | | | |
| 2A5b Construction and Demolition | LT-2A5b-2019-0001 | -0.729 | 0 | 0.055 | 0.294 | -0.350 | 0 |
| National total (row 141) including revised estimates and technical corrections accepted by Lithuania (calculated using data above) | | 8.497 | 7.853 | 5.541 | 5.709 | 5.667 | 5.786 |
| National Total for Compliance (row 154) estimate including revised estimates, technical corrections accepted by Lithuania and adjustments recommended (by technical expert review team) to be accepted by EC (calculated using data above) | | 8.497 | 7.853 | 5.541 | 5.709 | 5.667 | 5.786 |

Table 12: National totals as reported and national totals including revised estimates (RE) and technical corrections (TC) for PAHs (total PAHs and benzo(a)pyrene), dioxins/furans, PCBs, HCB, Cd, Hg and Pb[[9]](#footnote-9) [[10]](#footnote-10)

| **Description** | **Reference** | **Unit** | **Pollutant estimates** | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **1990** | **2005** | **2016** | **2017** | **2018** |
| **PCDD/PCDF (dioxins/furans)** | | | | | | | |
| National total (row 141) | Annex I, 14/03/2020 | (g I-TEQ) | 26.200 | 33.437 | 18.494 | 18.971 | 19.344 |
| National Total for Compliance (row 154) | Annex I, 14/03/2020 | (g I-TEQ) | 26.200 | 33.437 | 18.494 | 18.971 | 19.344 |
| **PAHs (total)** | | | | | | | |
| National total (row 141) | Annex I, 14/03/2020 | (t) | 19.783 | 11.080 | 9.616 | 9.739 | 9.661 |
| National Total for Compliance (row 154) | Annex I, 14/03/2020 | (t) | 19.783 | 11.080 | 9.616 | 9.739 | 9.661 |
| **Difference between original estimate and technical correction deemed necessary by the TERT** | | | | | | | |
| 5C2 Open Burning of Waste | LT-5C2-2020-0001 | (t) | 0.664 | 0.565 | 0.665 | 0.650 | 0.643 |
| National total (row 141) including revised estimates and technical corrections accepted by Lithuania (calculated using data above) | | (t) | 20.447 | 11.645 | 10.280 | 10.389 | 10.304 |
| National Total for Compliance (row 154) estimate including revised estimates, technical corrections accepted by Lithuania and adjustments recommended (by technical expert review team) to be accepted by EC (calculated using data above) | | (t) | 20.447 | 11.645 | 10.280 | 10.389 | 10.304 |
| **benzo(a) pyrene** | | | | | | | |
| National total (row 141) | Annex I, 14/03/2020 | (t) | 6.412 | 3.642 | 3.164 | 3.201 | 3.172 |
| National Total for Compliance (row 154) | Annex I, 14/03/2020 | (t) | 6.412 | 3.642 | 3.164 | 3.201 | 3.172 |
| **HCB** | | | | | | | |
| National total (row 141) | Annex I, 14/03/2020 | (kg) | 11.001 | 1.823 | 0.379 | 0.417 | 0.448 |
| National Total for Compliance (row 154) | Annex I, 14/03/2020 | (kg) | 11.001 | 1.823 | 0.379 | 0.417 | 0.448 |
| **PCBs** | | | | | | | |
| National total (row 141) | Annex I, 14/03/2020 | (kg) | 6.054 | 36.918 | 1.365 | 1.469 | 1.499 |
| National Total for Compliance (row 154) | Annex I, 14/03/2020 | (kg) | 6.054 | 36.918 | 1.365 | 1.469 | 1.499 |
| **Pb** | | | | | | | |
| National total (row 141) | Annex I, 14/03/2020 | (t) | 87.979 | 3.209 | 2.624 | 2.553 | 2.573 |
| National Total for Compliance (row 154) | Annex I, 14/03/2020 | (t) | 87.979 | 3.209 | 2.624 | 2.553 | 2.573 |
| **Difference between original estimate and revised estimate provided by Lithuania and accepted by the TERT** | | | | | | | |
| 1A3bvi Road Transport: Automobile Tyre and Brake Wear | LT-1A3bvi-2018-0002 | (t) | 0.007 | 0.062 | -0.044 | 0.040 | 0.073 |
| 1B2aiv Fugitive Emissions Oil: Refining / Storage | LT-1B2aiv-2018-0001 | (t) | 0.049 | 0.047 | 0.048 | 0.050 | 0.049 |
| **Difference between original estimate and technical correction deemed necessary by the TERT** | | | | | | | |
| 2G Other Product Use | LT-2G-2018-0001 | (t) | 0.154 | 0.354 | 0.392 | 0.437 | 0.477 |
| National total (row 141) including revised estimates and technical corrections accepted by Lithuania (calculated using data above) | | (t) | 88.189 | 3.672 | 3.020 | 3.079 | 3.172 |
| National Total for Compliance (row 154) estimate including revised estimates, technical corrections accepted by Lithuania and adjustments recommended (by technical expert review team) to be accepted by EC (calculated using data above) | | (t) | 88.189 | 3.672 | 3.020 | 3.079 | 3.172 |
| **Cd** | | | | | | | |
| National total (row 141) | Annex I, 14/03/2020 | (t) | 0.310 | 0.397 | 0.189 | 0.197 | 0.195 |
| National Total for Compliance (row 154) | Annex I, 14/03/2020 | (t) | 0.310 | 0.397 | 0.189 | 0.197 | 0.195 |
| **Difference between original estimate and revised estimate provided by Lithuania and accepted by the TERT** | | | | | | | |
| 1B2aiv Fugitive Emissions Oil: Refining / Storage | LT-1B2aiv-2018-0001 | (t) | 0.049 | 0.047 | 0.048 | 0.050 | 0.049 |
| National total (row 141) including revised estimates and technical corrections accepted by Lithuania (calculated using data above) | | (t) | 0.358 | 0.444 | 0.237 | 0.247 | 0.244 |
| National Total for Compliance (row 154) estimate including revised estimates, technical corrections accepted by Lithuania and adjustments recommended (by technical expert review team) to be accepted by EC (calculated using data above) | | (t) | 0.358 | 0.444 | 0.237 | 0.247 | 0.244 |
| **Hg** | | | | | | | |
| National total (row 141) | Annex I, 14/03/2020 | (t) | 0.463 | 0.339 | 0.134 | 0.137 | 0.142 |
| National Total for Compliance (row 154) | Annex I, 14/03/2020 | (t) | 0.463 | 0.339 | 0.134 | 0.137 | 0.142 |
| **Difference between original estimate and revised estimate provided by Lithuania and accepted by the TERT** | | | | | | | |
| 1B2aiv Fugitive Emissions Oil: Refining / Storage | LT-1B2aiv-2018-0001 | (t) | 0.049 | 0.047 | 0.048 | 0.050 | 0.049 |
| National total (row 141) including revised estimates and technical corrections accepted by Lithuania (calculated using data above) | | (t) | 0.512 | 0.385 | 0.182 | 0.187 | 0.192 |
| National Total for Compliance (row 154) estimate including revised estimates, technical corrections accepted by Lithuania and adjustments recommended (by technical expert review team) to be accepted by EC (calculated using data above) | | (t) | 0.512 | 0.385 | 0.182 | 0.187 | 0.192 |

# Statement from Lithuania on the conclusions presented by the technical expert review team

1. Lithuania did not raise any issues with the calculated estimates in Table 11.
2. Lithuania did not raise any issues with the calculated estimates in Table 12.

# Technical expert review team response to the statement from Lithuania

1. Lithuania did not raise any issues with the calculated estimates presented in Table 11 and 12 and therefore no response from the TERT is required.

ANNEX I - Technical corrections deemed necessary by the technical expert review team and revised estimates provided by Lithuania

1. Lithuania had Revised Estimates and Technical Corrections in the NECD Review 2020.
2. The technical expert review team calculated technical corrections for cases

* where it did not agree with the way that a revised estimate or technical correction from the NECD Review 2019 was implemented and where no revised estimate was accepted by the technical expert review team during the review
* and where the suggested recommendation of the technical expert review team would change the National Total by more than 2%.

1. The methods for calculating the technical corrections are set up in the “Guidance on technical corrections” and are based on the basic adjustment methods referred in the revised UNECE Reporting Guidelines and UNFCCC Adjustment guidance[[11]](#footnote-11) and use the EMEP/EEA inventory guidebook as a reference for methods and emission factors.

Table A1: Summary tables of Revised Estimates and Technical Corrections

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1** |  |  |  |  |  |  |  |  |
| EMRT ID: | | LT-2A5b-2019-0001 | | | | |  |
| EMRT URL: | | https://emrt-necd.eionet.europa.eu/2020/LT-2A5b-2019-0001 | | | | |  |
| Member State: | | Lithuania | | | | |  |
| Sector: | | 2A5b Construction and Demolition | | | | |  |
| Pollutants: | | PM2.5 | | | | |  |
| Completed by (SE): | | Coralie Jeannot | | | | |  |
| Reviewed by (LR): | | Justin Goodwin | | | | |  |
| Reviewed by (Counterpart): | | Maria Purzner | | | | |  |
| Reviewed by (Quality Controller): | | Chris Dore | | | | |  |
|  |  |  |  |  |  |  |  |
| The underlying problem: | | A RE was agreed by Lithuania during the 2019 review. It has been implemented in the 2020 NFR Tables, but the PM2.5 emissions for the year 2005, 2016 and 2017 differ from the RE agreed and the 2020 NFR Tables. The AD for Road construction provided by Lithuania during the review match the ones provided in the 2019 review for 2005, so that the TERT cannot understand the origin of the recalculations.  Lithuania did not justify the data used for the recalculation but answer that the problem was on negative values when calculating length of roads built per year. | | | | |  |
| Summarise the methodology used: | | The TERT used the PM2,5 emissions calculated from the 2019 PTC, as the AD for road construction match the ones provided by Lithuania during the 2020 review and the new AD for 2018 provided to estimate the emission for this PTC. | | | | |  |
|  |  |  |  |  |  |  |  |
| **2** | **Details of the corrected estimate** | | | | | | | |
|  | **Original Estimate (kt)** | | | | | **Notes** |  |
| Year | NOX | NMVOC | SOX | NH3 | PM2.5 |  |
| 2005 |  |  |  |  | 1.533 |  |  |
| 2010 |  |  |  |  | 0.293 |  |  |
| 2015 |  |  |  |  | 0.285 |  |  |
| 2016 |  |  |  |  | 0.043 |  |  |
| 2017 |  |  |  |  | 0.682 |  |  |
| 2018 |  |  |  |  | 0.380 |  |  |
|  |  |  |  |  |  |  |  |
|  | **Technical Correction calculated by the TERT (kt)** | | | | | **Notes** |  |
| Year | NOX | NMVOC | SOX | NH3 | PM2.5 |  |
| 2005 |  |  |  |  | 0.804 |  |  |
| 2010 |  |  |  |  | 0.293 |  |  |
| 2015 |  |  |  |  | 0.340 |  |  |
| 2016 |  |  |  |  | 0.337 |  |  |
| 2017 |  |  |  |  | 0.333 |  |  |
| 2018 |  |  |  |  | 0.380 |  |  |
|  |  |  |  |  |  |  |  |
|  | **Difference between Original Estimate and Technical Correction (kt)** | | | | | **Notes** |  |
| Year | NOX | NMVOC | SOX | NH3 | PM2.5 |  |
| 2005 |  |  |  |  | -0.729 |  |  |
| 2010 |  |  |  |  | 1e-16 |  |  |
| 2015 |  |  |  |  | 0.055 |  |  |
| 2016 |  |  |  |  | 0.294 |  |  |
| 2017 |  |  |  |  | -0.350 |  |  |
| 2018 |  |  |  |  | 0 |  |  |
|  |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1** |  |  |  |  |  |  |  |  |
| EMRT ID: | | LT-3B1b-2020-0001 | | | | |  |
| EMRT URL: | | https://emrt-necd.eionet.europa.eu/2020/LT-3B1b-2020-0001 | | | | |  |
| Member State: | | Lithuania | | | | |  |
| Sector: | | 3B1b Manure Management - Non-Dairy Cattle | | | | |  |
| Pollutants: | | NH3 | | | | |  |
| Completed by (SE): | | Mette Hjorth Mikkelsen | | | | |  |
| Reviewed by (LR): | | Justin Goodwin | | | | |  |
| Reviewed by (Counterpart): | | Anais Durand | | | | |  |
| Reviewed by (Quality Controller): | | Chris Dore | | | | |  |
|  |  |  |  |  |  |  |  |
| The underlying problem: | | Lithuania informed that the emission is based on a Tier 2 calculation, but no information on key parameters (N-exc, MMS and housing days) is given in the IIR and it was not possible during the review to document the calculation reported in submission 2020. | | | | |  |
| Summarise the methodology used: | | The TERT calculation is based on the N-flow tool provided in relation to EEA/EMEP GB 2019 and national data from CRF Tables is used. | | | | |  |
|  |  |  |  |  |  |  |  |
| **2** | **Details of the corrected estimate** | | | | | | | |
|  | **Original Estimate (kt)** | | | | | **Notes** |  |
| Year | NOX | NMVOC | SOX | NH3 | PM2.5 |  |
| 2005 |  |  |  | 1.704 |  |  |  |
| 2010 |  |  |  | 1.900 |  |  |  |
| 2015 |  |  |  | 2.223 |  |  |  |
| 2016 |  |  |  | 2.231 |  |  |  |
| 2017 |  |  |  | 2.180 |  |  |  |
| 2018 |  |  |  | 2.151 |  |  |  |
|  |  |  |  |  |  |  |  |
|  | **Technical Correction calculated by the TERT (kt)** | | | | | **Notes** |  |
| Year | NOX | NMVOC | SOX | NH3 | PM2.5 |  |
| 2005 |  |  |  | 2.634 |  |  |  |
| 2010 |  |  |  | 2.958 |  |  |  |
| 2015 |  |  |  | 3.487 |  |  |  |
| 2016 |  |  |  | 3.504 |  |  |  |
| 2017 |  |  |  | 3.455 |  |  |  |
| 2018 |  |  |  | 3.455 |  |  |  |
|  |  |  |  |  |  |  |  |
|  | **Difference between Original Estimate and Technical Correction (kt)** | | | | | **Notes** |  |
| Year | NOX | NMVOC | SOX | NH3 | PM2.5 |  |
| 2005 |  |  |  | 0.930 |  |  |  |
| 2010 |  |  |  | 1.059 |  |  |  |
| 2015 |  |  |  | 1.263 |  |  |  |
| 2016 |  |  |  | 1.273 |  |  |  |
| 2017 |  |  |  | 1.275 |  |  |  |
| 2018 |  |  |  | 1.304 |  |  |  |
|  |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1** |  |  |  |  |  |  |  |  |
| EMRT ID: | | LT-5A-2019-0002 | | | | |  |
| EMRT URL: | | https://emrt-necd.eionet.europa.eu/2020/LT-5A-2019-0002 | | | | |  |
| Member State: | | Lithuania | | | | |  |
| Sector: | | 5A Biological Treatment of Waste - Solid Waste Disposal on Land | | | | |  |
| Pollutants: | | NMVOC | | | | |  |
| Completed by (SE): | | Celine Gueguen | | | | |  |
| Reviewed by (LR): | | Justin Goodwin | | | | |  |
| Reviewed by (Counterpart): | | Romain Bort | | | | |  |
| Reviewed by (Quality Controller): | | Chris Dore | | | | |  |
|  |  |  |  |  |  |  |  |
| The underlying problem: | | The TERT notes with reference to NMVOC emissions from  5A - Solid waste disposal and all years that there is an over-estimate of emissions because a Tier 1 is applied resulting in a key category. This was raised during the 2019 NECD review and the methodology proposed by the TERT in 2019 was not implemented. | | | | |  |
| Summarise the methodology used: | | NMVOC emissions are estimated on the basis of CH4 emissions : CH4 emissions from 5A (as reported to the UNFCCC) are converted into a volume of CH4 (using the molar volume of CH4) and then into a volume of biogas (applying the fraction of CH4 in biogas F = 50%) and then, the fraction of NMVOC in biogas presented in the note at the bottom of table 3-1, chapter 5A of the 2016 EMEP/EEA GB (5.65 g/m3 NMVOC of landfill gas) is applied. | | | | |  |
|  |  |  |  |  |  |  |  |
| **2** | **Details of the corrected estimate** | | | | | | | |
|  | **Original Estimate (kt)** | | | | | **Notes** |  |
| Year | NOX | NMVOC | SOX | NH3 | PM2.5 |  |
| 2005 |  | 1.925 |  |  |  |  |  |
| 2010 |  | 1.882 |  |  |  |  |  |
| 2015 |  | 1.120 |  |  |  |  |  |
| 2016 |  | 0.713 |  |  |  |  |  |
| 2017 |  | 0.540 |  |  |  |  |  |
| 2018 |  | 0.540 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  | **Technical Correction calculated by the TERT (kt)** | | | | | **Notes** |  |
| Year | NOX | NMVOC | SOX | NH3 | PM2.5 |  |
| 2005 |  | 0.492 |  |  |  |  |  |
| 2010 |  | 0.492 |  |  |  |  |  |
| 2015 |  | 0.414 |  |  |  |  |  |
| 2016 |  | 0.395 |  |  |  |  |  |
| 2017 |  | 0.406 |  |  |  |  |  |
| 2018 |  | 0.327 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  | **Difference between Original Estimate and Technical Correction (kt)** | | | | | **Notes** |  |
| Year | NOX | NMVOC | SOX | NH3 | PM2.5 |  |
| 2005 |  | -1.433 |  |  |  |  |  |
| 2010 |  | -1.390 |  |  |  |  |  |
| 2015 |  | -0.707 |  |  |  |  |  |
| 2016 |  | -0.318 |  |  |  |  |  |
| 2017 |  | -0.134 |  |  |  |  |  |
| 2018 |  | -0.213 |  |  |  |  |  |
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| **1** |  |  |  |  |  |  |  |  |
| EMRT ID: | | LT-1A3bv-2017-0001 | | | | |  |
| EMRT URL: | | https://emrt-necd.eionet.europa.eu/2020/LT-1A3bv-2017-0001 | | | | |  |
| Member State: | | Lithuania | | | | |  |
| Sector: | | 1A3bv Road Transport: Gasoline Evaporation | | | | |  |
| Pollutants: | | NMVOC | | | | |  |
| Completed by (SE): | | Matina Kastori | | | | |  |
| Reviewed by (LR): | | Justin Goodwin | | | | |  |
| Reviewed by (Counterpart): | | Jean-Marc André | | | | |  |
| Reviewed by (Quality Controller): | | Chris Dore | | | | |  |
|  |  |  |  |  |  |  |  |
| The underlying problem: | | Underestimate of NMVOC emissions. | | | | |  |
| Summarise the methodology used: | | Lithuania recalculated NMVOC emissions using COPERT v5.0. | | | | |  |
|  |  |  |  |  |  |  |  |
| **2** | **Details of the corrected estimate** | | | | | | | |
|  | **Original Estimate (kt)** | | | | | **Notes** |  |
| Year | NOX | NMVOC | SOX | NH3 | PM2.5 |  |
| 2005 |  |  |  |  |  |  |  |
| 2010 |  | 1.371 |  |  |  |  |  |
| 2015 |  | 0.467 |  |  |  |  |  |
| 2016 |  | 0.458 |  |  |  |  |  |
| 2017 |  | 0.416 |  |  |  |  |  |
| 2018 |  | 0.533 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  | **Revised Estimate received from MS (kt)** | | | | | **Notes** |  |
| Year | NOX | NMVOC | SOX | NH3 | PM2.5 |  |
| 2005 |  |  |  |  |  |  |  |
| 2010 |  | 1.631 |  |  |  |  |  |
| 2015 |  | 1.489 |  |  |  |  |  |
| 2016 |  | 1.222 |  |  |  |  |  |
| 2017 |  | 1.134 |  |  |  |  |  |
| 2018 |  | 1.249 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  | **Difference between Original Estimate and Revised Estimate (kt)** | | | | | **Notes** |  |
| Year | NOX | NMVOC | SOX | NH3 | PM2.5 |  |
| 2005 |  |  |  |  |  |  |  |
| 2010 |  | 0.260 |  |  |  |  |  |
| 2015 |  | 1.022 |  |  |  |  |  |
| 2016 |  | 0.764 |  |  |  |  |  |
| 2017 |  | 0.718 |  |  |  |  |  |
| 2018 |  | 0.716 |  |  |  |  |  |
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| **1** |  |  |  |  |  |  |  |  |
| EMRT ID: | | LT-1A3ei-2017-0001 | | | | |  |
| EMRT URL: | | https://emrt-necd.eionet.europa.eu/2020/LT-1A3ei-2017-0001 | | | | |  |
| Member State: | | Lithuania | | | | |  |
| Sector: | | 1A3ei Pipeline Transport | | | | |  |
| Pollutants: | | PM2.5 | | | | |  |
| Completed by (SE): | | Matina Kastori | | | | |  |
| Reviewed by (LR): | | Justin Goodwin | | | | |  |
| Reviewed by (Counterpart): | | Jean-Marc André | | | | |  |
| Reviewed by (Quality Controller): | | Chris Dore | | | | |  |
|  |  |  |  |  |  |  |  |
| The underlying problem: | | PM2.5 emissions were not included in the NFR 2020, even though last year a revised estimate was provided. | | | | |  |
| Summarise the methodology used: | | Lithuania provided again a revised estimate using Tier 2 emission factor from the EMEP/EEA Guidebook. | | | | |  |
|  |  |  |  |  |  |  |  |
| **2** | **Details of the corrected estimate** | | | | | | | |
|  | **Original Estimate (kt)** | | | | | **Notes** |  |
| Year | NOX | NMVOC | SOX | NH3 | PM2.5 |  |
| 2005 |  |  |  |  | NA |  |  |
| 2010 |  |  |  |  | NA |  |  |
| 2015 |  |  |  |  | NA |  |  |
| 2016 |  |  |  |  | NA |  |  |
| 2017 |  |  |  |  | NA |  |  |
| 2018 |  |  |  |  | NA |  |  |
|  |  |  |  |  |  |  |  |
|  | **Revised Estimate received from MS (kt)** | | | | | **Notes** |  |
| Year | NOX | NMVOC | SOX | NH3 | PM2.5 |  |
| 2005 |  |  |  |  | 0.001 |  |  |
| 2010 |  |  |  |  | 0.002 |  |  |
| 2015 |  |  |  |  | 0.002 |  |  |
| 2016 |  |  |  |  | 0.002 |  |  |
| 2017 |  |  |  |  | 0.002 |  |  |
| 2018 |  |  |  |  | 0.002 |  |  |
|  |  |  |  |  |  |  |  |
|  | **Difference between Original Estimate and Revised Estimate (kt)** | | | | | **Notes** |  |
| Year | NOX | NMVOC | SOX | NH3 | PM2.5 |  |
| 2005 |  |  |  |  | 0.001 |  |  |
| 2010 |  |  |  |  | 0.002 |  |  |
| 2015 |  |  |  |  | 0.002 |  |  |
| 2016 |  |  |  |  | 0.002 |  |  |
| 2017 |  |  |  |  | 0.002 |  |  |
| 2018 |  |  |  |  | 0.002 |  |  |
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| **1** |  |  |  |  |  |  |  |  |
| EMRT ID: | | LT-3B1a-2020-0001 | | | | |  |
| EMRT URL: | | https://emrt-necd.eionet.europa.eu/2020/LT-3B1a-2020-0001 | | | | |  |
| Member State: | | Lithuania | | | | |  |
| Sector: | | 3B1a Manure Management - Dairy Cattle | | | | |  |
| Pollutants: | | NH3 | | | | |  |
| Completed by (SE): | | Mette Hjorth Mikkelsen | | | | |  |
| Reviewed by (LR): | | Justin Goodwin | | | | |  |
| Reviewed by (Counterpart): | | Anais Durand | | | | |  |
| Reviewed by (Quality Controller): | | Chris Dore | | | | |  |
|  |  |  |  |  |  |  |  |
| The underlying problem: | | Lithuania informed that the emission is based on a Tier2 calculation, but no information on key parameters (N-exc, MMS and housing days) is given in the IIR and it was not possible during the review to document the calculation reported in submission 2020. | | | | |  |
| Summarise the methodology used: | | The Lithuania calculation is based on the N-flow tool approach based on equations from the EEA/EMEP GB 2019. National data for number of dairy cattle, N.excretion and manure management system match the number given i CRF Tables submission 2020. | | | | |  |
|  |  |  |  |  |  |  |  |
| **2** | **Details of the corrected estimate** | | | | | | | |
|  | **Original Estimate (kt)** | | | | | **Notes** |  |
| Year | NOX | NMVOC | SOX | NH3 | PM2.5 |  |
| 2005 |  |  |  | 2.989 |  |  |  |
| 2010 |  |  |  | 2.942 |  |  |  |
| 2015 |  |  |  | 2.848 |  |  |  |
| 2016 |  |  |  | 2.681 |  |  |  |
| 2017 |  |  |  | 2.591 |  |  |  |
| 2018 |  |  |  | 2.453 |  |  |  |
|  |  |  |  |  |  |  |  |
|  | **Revised Estimate received from MS (kt)** | | | | | **Notes** |  |
| Year | NOX | NMVOC | SOX | NH3 | PM2.5 |  |
| 2005 |  |  |  | 4.355 |  |  |  |
| 2010 |  |  |  | 4.243 |  |  |  |
| 2015 |  |  |  | 4.073 |  |  |  |
| 2016 |  |  |  | 3.829 |  |  |  |
| 2017 |  |  |  | 3.693 |  |  |  |
| 2018 |  |  |  | 3.655 |  |  |  |
|  |  |  |  |  |  |  |  |
|  | **Difference between Original Estimate and Revised Estimate (kt)** | | | | | **Notes** |  |
| Year | NOX | NMVOC | SOX | NH3 | PM2.5 |  |
| 2005 |  |  |  | 1.366 |  |  |  |
| 2010 |  |  |  | 1.300 |  |  |  |
| 2015 |  |  |  | 1.224 |  |  |  |
| 2016 |  |  |  | 1.148 |  |  |  |
| 2017 |  |  |  | 1.103 |  |  |  |
| 2018 |  |  |  | 1.202 |  |  |  |
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| **1** |  |  |  |  |  |  |  |  |
| EMRT ID: | | LT-3B3-2020-0001 | | | | |  |
| EMRT URL: | | https://emrt-necd.eionet.europa.eu/2020/LT-3B3-2020-0001 | | | | |  |
| Member State: | | Lithuania | | | | |  |
| Sector: | | 3B3 Manure Management - Swine | | | | |  |
| Pollutants: | | NH3 | | | | |  |
| Completed by (SE): | | Mette Hjorth Mikkelsen | | | | |  |
| Reviewed by (LR): | | Justin Goodwin | | | | |  |
| Reviewed by (Counterpart): | | Anais Durand | | | | |  |
| Reviewed by (Quality Controller): | | Chris Dore | | | | |  |
|  |  |  |  |  |  |  |  |
| The underlying problem: | | Lithuania informed that the emission is based on a Tier2 calculation, but no information on key parameters (N-exc, MMS and housing days) is given in the IIR and it was not possible during the review to document the calculation reported in submission 2020. | | | | |  |
| Summarise the methodology used: | | The TERT calculation is based on the N-flow tool provided in relation to EEA/EMEP GB 2019 and national data from CRF Tables is used. Lithuania has accepted the estimate calculated by the TERT. | | | | |  |
|  |  |  |  |  |  |  |  |
| **2** | **Details of the corrected estimate** | | | | | | | |
|  | **Original Estimate (kt)** | | | | | **Notes** |  |
| Year | NOX | NMVOC | SOX | NH3 | PM2.5 |  |
| 2005 |  |  |  | 4.281 |  |  |  |
| 2010 |  |  |  | 3.648 |  |  |  |
| 2015 |  |  |  | 2.695 |  |  |  |
| 2016 |  |  |  | 2.575 |  |  |  |
| 2017 |  |  |  | 2.435 |  |  |  |
| 2018 |  |  |  | 2.272 |  |  |  |
|  |  |  |  |  |  |  |  |
|  | **Revised Estimate received from MS (kt)** | | | | | **Notes** |  |
| Year | NOX | NMVOC | SOX | NH3 | PM2.5 |  |
| 2005 |  |  |  | 5.271 |  |  |  |
| 2010 |  |  |  | 4.392 |  |  |  |
| 2015 |  |  |  | 3.287 |  |  |  |
| 2016 |  |  |  | 3.168 |  |  |  |
| 2017 |  |  |  | 2.988 |  |  |  |
| 2018 |  |  |  | 2.772 |  |  |  |
|  |  |  |  |  |  |  |  |
|  | **Difference between Original Estimate and Revised Estimate (kt)** | | | | | **Notes** |  |
| Year | NOX | NMVOC | SOX | NH3 | PM2.5 |  |
| 2005 |  |  |  | 0.990 |  |  |  |
| 2010 |  |  |  | 0.744 |  |  |  |
| 2015 |  |  |  | 0.592 |  |  |  |
| 2016 |  |  |  | 0.592 |  |  |  |
| 2017 |  |  |  | 0.553 |  |  |  |
| 2018 |  |  |  | 0.500 |  |  |  |
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| **1** |  |  |  |  |  |  |  |  |  |  |  |
| EMRT ID: | | | LT-2G-2018-0001 | | | | | | |  |
| EMRT URL: | | | https://emrt-necd.eionet.europa.eu/2020/LT-2G-2018-0001 | | | | | | |  |
| Member State: | | | Lithuania | | | | | | |  |
| Sector: | | | 2G Other Product Use (please specify in the IIR) | | | | | | |  |
| Pollutants: | | | Pb | | | | | | |  |
| Completed by (SE): | | | Coralie Jeannot | | | | | | |  |
| Reviewed by (LR): | | | Justin Goodwin | | | | | | |  |
| Reviewed by (Counterpart): | | |  | | | | | | |  |
| Reviewed by (Quality Controller): | | | Chris Dore | | | | | | |  |
|  |  |  |  |  |  |  |  |  |  |  |
| The underlying problem: | | | Lithuania reports Pb emissions from 2G as NA for all years while the EMEP/EEA Guidebook 2016 has an emission factor for the use of fireworks. Last year, the TERT sent a Technical Correction (LT-2G-2019-0001\_PTC\_POPsHMs.xlsx) which was accepted by Lithuania but not implemented in the latest 2020 inventory submission | | | | | | |  |
| Summarise the methodology used: | | | The Pb emissions were estimating the fireworks consumption with a tier 2 emission factor from the EMEP/EEA Guidebook 2016. The activity data in 2000-2017 is based on the fireworks import and export statistics from Eurostat and the activity data in 1990-1999 is extrapolated from the 2000-2017 fireworks consumption. The emission factor is from table 3.13 of chapter 2G of the EMEP/EEA Guidebook. | | | | | | |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **2** | **Details of the corrected estimate** | | | | | | | | | | |
|  | **Original Estimate** | | | | | | | | **Notes** |  |
| Year | Pb (t) | Cd (t) | Hg (t) | PCDD/F  (g I-TEQ) | BaP (t) | PAHs (t) | HCB (kg) | PCBs (kg) |  |
| 1990 | NA |  |  |  |  |  |  |  |  |  |
| 2005 | NA |  |  |  |  |  |  |  |  |  |
| 2016 | NA |  |  |  |  |  |  |  |  |  |
| 2017 | NA |  |  |  |  |  |  |  |  |  |
| 2018 | NA |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  | **Technical Correction calculated by the TERT** | | | | | | | | **Notes** |  |
| Year | Pb (t) | Cd (t) | Hg (t) | PCDD/F  (g I-TEQ) | BaP (t) | PAHs (t) | HCB (kg) | PCBs (kg) |  |
| 1990 | 0.154 |  |  |  |  |  |  |  |  |  |
| 2005 | 0.354 |  |  |  |  |  |  |  |  |  |
| 2016 | 0.392 |  |  |  |  |  |  |  |  |  |
| 2017 | 0.437 |  |  |  |  |  |  |  |  |  |
| 2018 | 0.477 |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  | **Difference between Original Estimate and Technical Correction** | | | | | | | | **Notes** |  |
| Year | Pb (t) | Cd (t) | Hg (t) | PCDD/F  (g I-TEQ) | BaP (t) | PAHs (t) | HCB (kg) | PCBs (kg) |  |
| 1990 | 0.154 |  |  |  |  |  |  |  |  |  |
| 2005 | 0.354 |  |  |  |  |  |  |  |  |  |
| 2016 | 0.392 |  |  |  |  |  |  |  |  |  |
| 2017 | 0.437 |  |  |  |  |  |  |  |  |  |
| 2018 | 0.477 |  |  |  |  |  |  |  |  |  |
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| EMRT ID: | | | LT-5C2-2020-0001 | | | | | | |  |
| EMRT URL: | | | https://emrt-necd.eionet.europa.eu/2020/LT-5C2-2020-0001 | | | | | | |  |
| Member State: | | | Lithuania | | | | | | |  |
| Sector: | | | 5C2 Open Burning of Waste | | | | | | |  |
| Pollutants: | | | PAHs ("Total 1-4") | | | | | | |  |
| Completed by (SE): | | | Celine Gueguen | | | | | | |  |
| Reviewed by (LR): | | | Justin Goodwin | | | | | | |  |
| Reviewed by (Counterpart): | | | Romain Bort | | | | | | |  |
| Reviewed by (Quality Controller): | | | Chris Dore | | | | | | |  |
|  |  |  |  |  |  |  |  |  |  |  |
| The underlying problem: | | | For 5C2 - Open burning for all years, the sum of the 4 mandatory PAHs, called "Total 1-4", is not reported in the NFR tables (BaP, BbF, BkF, IndP) despite emissions from each expected PAH species (BaP, BbF, BkF) being reported. No EF for IndP is provided in the 2019 EMEP/EEA GB. | | | | | | |  |
| Summarise the methodology used: | | | The sum of the 4 expected PAHs reported in the NFR tables used to estimate PAH total. | | | | | | |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **2** | **Details of the corrected estimate** | | | | | | | | | | |
|  | **Original Estimate** | | | | | | | | **Notes** |  |
| Year | Pb (t) | Cd (t) | Hg (t) | PCDD/F  (g I-TEQ) | BaP (t) | PAHs (t) | HCB (kg) | PCBs (kg) |  |
| 1990 |  |  |  |  |  | 0 |  |  |  |  |
| 2005 |  |  |  |  |  | 0 |  |  |  |  |
| 2016 |  |  |  |  |  | 0 |  |  |  |  |
| 2017 |  |  |  |  |  | 0 |  |  |  |  |
| 2018 |  |  |  |  |  | 0 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  | **Technical Correction calculated by the TERT** | | | | | | | | **Notes** |  |
| Year | Pb (t) | Cd (t) | Hg (t) | PCDD/F  (g I-TEQ) | BaP (t) | PAHs (t) | HCB (kg) | PCBs (kg) |  |
| 1990 |  |  |  |  |  | 0.664 |  |  |  |  |
| 2005 |  |  |  |  |  | 0.565 |  |  |  |  |
| 2016 |  |  |  |  |  | 0.665 |  |  |  |  |
| 2017 |  |  |  |  |  | 0.650 |  |  |  |  |
| 2018 |  |  |  |  |  | 0.643 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  | **Difference between Original Estimate and Technical Correction** | | | | | | | | **Notes** |  |
| Year | Pb (t) | Cd (t) | Hg (t) | PCDD/F  (g I-TEQ) | BaP (t) | PAHs (t) | HCB (kg) | PCBs (kg) |  |
| 1990 |  |  |  |  |  | 0.664 |  |  |  |  |
| 2005 |  |  |  |  |  | 0.565 |  |  |  |  |
| 2016 |  |  |  |  |  | 0.665 |  |  |  |  |
| 2017 |  |  |  |  |  | 0.650 |  |  |  |  |
| 2018 |  |  |  |  |  | 0.643 |  |  |  |  |
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| EMRT ID: | | | LT-1A3bvi-2018-0002 | | | | | | |  |
| EMRT URL: | | | https://emrt-necd.eionet.europa.eu/2020/LT-1A3bvi-2018-0002 | | | | | | |  |
| Member State: | | | Lithuania | | | | | | |  |
| Sector: | | | 1A3bvi Road Transport: Automobile Tyre and Brake Wear | | | | | | |  |
| Pollutants: | | | Pb | | | | | | |  |
| Completed by (SE): | | | Matina Kastori | | | | | | |  |
| Reviewed by (LR): | | | Justin Goodwin | | | | | | |  |
| Reviewed by (Counterpart): | | | Jean-Marc André | | | | | | |  |
| Reviewed by (Quality Controller): | | | Chris Dore | | | | | | |  |
|  |  |  |  |  |  |  |  |  |  |  |
| The underlying problem: | | | Lack of transparency on Tier method used, sector 1A3bvi (tyre and brake wear), pollutant Pb (key category), which resulted in slightly underestimated emissions. | | | | | | |  |
| Summarise the methodology used: | | | Lithuania recalculated these emissions using COPERT v.5.0. | | | | | | |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **2** | **Details of the corrected estimate** | | | | | | | | | | |
|  | **Original Estimate** | | | | | | | | **Notes** |  |
| Year | Pb (t) | Cd (t) | Hg (t) | PCDD/F  (g I-TEQ) | BaP (t) | PAHs (t) | HCB (kg) | PCBs (kg) |  |
| 1990 | 0.488 |  |  |  |  |  |  |  |  |  |
| 2005 | 0.312 |  |  |  |  |  |  |  |  |  |
| 2016 | 0.534 |  |  |  |  |  |  |  |  |  |
| 2017 | 0.476 |  |  |  |  |  |  |  |  |  |
| 2018 | 0.476 |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  | **Revised Estimate received from MS** | | | | | | | | **Notes** |  |
| Year | Pb (t) | Cd (t) | Hg (t) | PCDD/F  (g I-TEQ) | BaP (t) | PAHs (t) | HCB (kg) | PCBs (kg) |  |
| 1990 | 0.495 |  |  |  |  |  |  |  |  |  |
| 2005 | 0.374 |  |  |  |  |  |  |  |  |  |
| 2016 | 0.490 |  |  |  |  |  |  |  |  |  |
| 2017 | 0.515 |  |  |  |  |  |  |  |  |  |
| 2018 | 0.548 |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  | **Difference between Original Estimate and Revised Estimate** | | | | | | | | **Notes** |  |
| Year | Pb (t) | Cd (t) | Hg (t) | PCDD/F  (g I-TEQ) | BaP (t) | PAHs (t) | HCB (kg) | PCBs (kg) |  |
| 1990 | 0.007 |  |  |  |  |  |  |  |  |  |
| 2005 | 0.062 |  |  |  |  |  |  |  |  |  |
| 2016 | -0.044 |  |  |  |  |  |  |  |  |  |
| 2017 | 0.040 |  |  |  |  |  |  |  |  |  |
| 2018 | 0.073 |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1** |  |  |  |  |  |  |  |  |  |  |  |
| EMRT ID: | | | LT-1B2aiv-2018-0001 | | | | | | |  |
| EMRT URL: | | | https://emrt-necd.eionet.europa.eu/2020/LT-1B2aiv-2018-0001 | | | | | | |  |
| Member State: | | | Lithuania | | | | | | |  |
| Sector: | | | 1B2aiv Fugitive Emissions Oil: Refining / Storage | | | | | | |  |
| Pollutants: | | | Cd, Hg, Pb | | | | | | |  |
| Completed by (SE): | | | Marlene Schmidt Plejdrup | | | | | | |  |
| Reviewed by (LR): | | | Justin Goodwin | | | | | | |  |
| Reviewed by (Counterpart): | | | Stijn  Dellaert | | | | | | |  |
| Reviewed by (Quality Controller): | | | Chris Dore | | | | | | |  |
|  |  |  |  |  |  |  |  |  |  |  |
| The underlying problem: | | | In the 2019 NECD review, Lithuania accepted to include the revised estimate for 1B2aiv for Cd, Hg and Pb in the next submission. The TERT notes that Cd, Hg and Pb are still reported as "NE" in the NFR. The 2016 EMEP/EEA Guidebook includes Tier 1 emission factors. | | | | | | |  |
| Summarise the methodology used: | | | Emissions are estimated from the Tier 1 EMEP/EEA 2016 Guidebook emission factors and the activity data (crude oil refined) reported by Lithuania in the 2020 NFR. | | | | | | |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **2** | **Details of the corrected estimate** | | | | | | | | | | |
|  | **Original Estimate** | | | | | | | | **Notes** |  |
| Year | Pb (t) | Cd (t) | Hg (t) | PCDD/F  (g I-TEQ) | BaP (t) | PAHs (t) | HCB (kg) | PCBs (kg) |  |
| 1990 | NE | NE | NE |  |  |  |  |  |  |  |
| 2005 | NE | NE | NE |  |  |  |  |  |  |  |
| 2016 | NE | NE | NE |  |  |  |  |  |  |  |
| 2017 | NE | NE | NE |  |  |  |  |  |  |  |
| 2018 | NE | NE | NE |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  | **Revised Estimate received from MS** | | | | | | | | **Notes** |  |
| Year | Pb (t) | Cd (t) | Hg (t) | PCDD/F  (g I-TEQ) | BaP (t) | PAHs (t) | HCB (kg) | PCBs (kg) |  |
| 1990 | 0.049 | 0.049 | 0.049 |  |  |  |  |  |  |  |
| 2005 | 0.047 | 0.047 | 0.047 |  |  |  |  |  |  |  |
| 2016 | 0.048 | 0.048 | 0.048 |  |  |  |  |  |  |  |
| 2017 | 0.050 | 0.050 | 0.050 |  |  |  |  |  |  |  |
| 2018 | 0.049 | 0.049 | 0.049 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  | **Difference between Original Estimate and Revised Estimate** | | | | | | | | **Notes** |  |
| Year | Pb (t) | Cd (t) | Hg (t) | PCDD/F  (g I-TEQ) | BaP (t) | PAHs (t) | HCB (kg) | PCBs (kg) |  |
| 1990 | 0.049 | 0.049 | 0.049 |  |  |  |  |  |  |  |
| 2005 | 0.047 | 0.047 | 0.047 |  |  |  |  |  |  |  |
| 2016 | 0.048 | 0.048 | 0.048 |  |  |  |  |  |  |  |
| 2017 | 0.050 | 0.050 | 0.050 |  |  |  |  |  |  |  |
| 2018 | 0.049 | 0.049 | 0.049 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |

References and Supporting Documents

Annex I emission reporting template. Available at <http://www.ceip.at/ms/ceip_home1/ceip_home/reporting_instructions/>

ECE/EB.AIR/111/Add.1: Decision 2012/3: Adjustments under the Gothenburg Protocol to emission reduction commitments or to inventories for the purposes of comparing total national emissions with them  
<https://www.unece.org/fileadmin/DAM/env/documents/2013/air/eb/ECE.EB.AIR.114_ENG.pdf>

ECE/EB.AIR/113/Add.1: Decision 2012/12: Guidance for adjustments under the 1999 Protocol to Abate Acidification, Eutrophication and Ground-level Ozone to emission reduction commitments or to inventories for the purposes of comparing total national emissions with them  
<https://www.unece.org/fileadmin/DAM/env/documents/2012/EB/ECE_EB.AIR_113_Add.1_ENG_1_.pdf>

ECE/EB.AIR/125: 2014 Reporting Guidelines for Estimating and Reporting Emission Data under CLRTAP  
<http://www.ceip.at/ms/ceip_home1/ceip_home/reporting_instructions/>

ECE/EB.AIR/127/Add.1: Decision 2014/1: Improving the guidance for adjustments under the 1999 Protocol to Abate Acidification, Eutrophication and Ground-level Ozone to emission reduction commitments or to inventories for the purposes of comparing total national emissions with them  
<https://www.unece.org/fileadmin/DAM/env/documents/2014/AIR/EB/Decision_2014_1.pdf>

ECE/EB.AIR/130: Technical Guidance for Parties Making Adjustment Applications and for the Expert Review of Adjustment Applications, 14 April 2015 <http://www.ceip.at/fileadmin/inhalte/emep/Adjustments/ECE_EB_AIR_130_AV_for_the_web.pdf>

EEA 2020. NEC Directive reporting status 2020. European Environment Agency, Copenhagen.   
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<https://ec.europa.eu/environment/air/documents/Air%20Emission%20Inventory%20Review%20Guidelines%202020_Final.pdf>

NEC Directive 2001, DIRECTIVE 2001/81/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 October 2001 on national emission ceilings for certain atmospheric pollutants  
<http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02001L0081-20130701&from=EN>

NEC Directive 2016, DIRECTIVE (EU) 2016/2284 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 14 December 2016 on the reduction of national emissions of certain atmospheric pollutants, amending Directive 2003/35/EC and repealing Directive 2001/81/EC. <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2016.344.01.0001.01.ENG>

1. As this review relates to a legal obligation that was due by 15 February 2020, the UK is included in the review as per the transition period arrangements following its withdrawal from the EU. [↑](#footnote-ref-1)
2. DIRECTIVE (EU) 2016/2284 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 14 December 2016 on the reduction of national emissions of certain atmospheric pollutants, amending Directive 2003/35/EC and repealing Directive 2001/81/EC [↑](#footnote-ref-2)
3. NECD Review 2019 reports are available at <http://ec.europa.eu/environment/air/reduction/implementation.html> [↑](#footnote-ref-3)
4. Available at <http://www.ceip.at/fileadmin/inhalte/emep/Adjustments/ECE_EB_AIR_130_AV_for_the_web.pdf> [↑](#footnote-ref-4)
5. The Annexes to the Reporting Guidelines are available at https://www.ceip.at/reporting-instructions/annexes-to-the-2014-reporting-guidelines. [↑](#footnote-ref-5)
6. Available at <https://eur-lex.europa.eu/eli/dir/2001/81/2018-07-01> [↑](#footnote-ref-6)
7. The tables presented in this report show numbers rounded to three decimal places, although most numbers are available with greater precision. For all calculations, 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. [↑](#footnote-ref-7)
8. As defined in Annex I The 'National Total for Compliance (NECD)' includes the ‘National Total (based on fuel sold)’ (row 141) corrected for i) approved adjustments and flexibilities to national totals (row 153) and, if applicable, ii) national totals based on transport fuel used (rows 143-149) as well as iii) the subtraction of sectors 3B + 3D for NOx and NMVOC (only from 2020 onwards and for the year 2005 as a basis for emission reduction commitment calculations), according to the NEC Directive, Article 4/3(d). [↑](#footnote-ref-8)
9. The tables presented in this report show numbers rounded to three decimal places, although most numbers are available with greater precision. For all calculations, 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. [↑](#footnote-ref-9)
10. As defined in Annex I The 'National Total for Compliance (NECD)' includes the ‘National Total (based on fuel sold)’ (row 141) corrected for i) approved adjustments and flexibilities to national totals (row 153) and, if applicable, ii) national totals based on transport fuel used (rows 143-149) as well as iii) the subtraction of sectors 3B + 3D for NOx and NMVOC (only from 2020 onwards and for the year 2005 as a basis for emission reduction commitment calculations), according to the NEC Directive, Article 4/3(d). [↑](#footnote-ref-10)
11. Technical guidance on methodologies for adjustments under Article 5, paragraph 2, of the Kyoto Protocol [↑](#footnote-ref-11)