



Economic and Social Council

Distr.: General
4 July 2016

Original: English

Economic Commission for Europe

Executive Body for the Convention on Long-range
Transboundary Air Pollution

**Steering Body to the Cooperative Programme for
Monitoring and Evaluation of the Long-range
Transmission of Air Pollutants in Europe**

Working Group on Effects

Second joint session*

Geneva, 13–16 September 2016

Item 4 (a) of the provisional agenda

**Progress in emissions inventories and other emissions-related
issues: adjustments under the Protocol to Abate Acidification,
Eutrophication and Ground-level Ozone**

Review of adjustment applications

Report by the Centre on Emission Inventories and Projections

Summary

The present report was prepared by the Centre on Emission Inventories and Projections in line with its mandate under the 2016–2017 workplan for the implementation of the Convention on Long-range Transboundary Air Pollution (ECE/EB.AIR/133/Add.1) and the informal document submitted to the Executive Body for the Convention at its thirty-fourth session, “Basic and multi-year activities in the 2016–2017 period” (item 1.7.1), and is based on documents submitted by Parties and findings of the expert review team.

* The Executive Body to the Convention agreed that, as of 2015, the Working Group on Effects and the Steering Body to the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe should meet jointly, to achieve enhanced integration and cooperation between the Convention’s two scientific subsidiary bodies (ECE/EB.AIR/122, para. 47 (b)).



The report provides a summary of the 2016 review of applications for adjustments to emission inventories submitted by two Parties to the Convention — Germany and Luxembourg — in accordance with Executive Body decisions 2012/3, 2012/4 and 2012/12, as amended by decision 2014/1 (see ECE/EB.AIR/111/Add.1, ECE/EB.AIR/113/Add.1 and ECE/AB.AIR/127/Add.1), and following the Technical Guidance for Parties Making Adjustment Applications and for the Expert Review of Adjustment Applications (ECE/EB.AIR/130) prepared by the Task Force on Emission Inventories and Projections in accordance with decision 2014/1.

The report also provides information on reporting of adjustments approved in years prior to 2016 by Belgium, Denmark, Finland, France, Germany, Luxembourg and Spain.

Contents

	<i>Page</i>
Introduction	4
I. Overview of 2016 adjustment applications	5
II. Organization of the review	5
III. Assessment of applications for adjustments	6
A. Germany — road transport (1A3bi-iv)	6
B. Germany — organic fertilizer applied to soils (3Da2c) and agriculture other (3I)	7
C. Luxembourg — manure management (3B) and cultivated crops (3De), NO _x and NMVOC ..	8
IV. Assessment of adjustments approved prior to 2016	9
A. Belgium 2015 — road transport (1A3bi-iv)	10
B. Belgium — manure management (3B), agricultural soils (3Da1, 3Da2a) and cultivated crops (3De)	10
C. Denmark — inorganic N-Fertilizers (3D1a), cultivated crops (3De) and manure management (3B)	10
D. Finland — stationary combustion (1A2gviii, 1A4ai, 1A4bi, 1A4ci)	10
E. Finland — road transport (1A3bi-iv)	11
F. France — road transport (1A3bi-iv)	11
G. Germany — manure management (3B) and cultivated crops (3De)	11
H. Luxembourg — road transport (1A3bi-iv)	11
I. Spain — road transport (1A3bi, 1A3biii)	12
V. Conclusions and recommendations	12
A. Adjustment cases prior to 2016	12
B. 2016 adjustment cases	13
C. Recommendations from the reviewers	14
 Tables	
1. Applications for adjustments to emission reduction commitments or inventories in 2016	5
2. Impact of adjustment on the NO _x emissions inventory of Germany for the road transport sector for 2010–2014	6
3. Impact of adjustment on the NO _x emissions inventory of Germany for organic fertilizer applied to soils and agriculture other for 2010–2014	7
4. Impact of adjustment on the NH ₃ emissions inventory of Germany for organic fertilizer applied to soils and agriculture other for 2010–2014	8
5. Impact of adjustment on the NO _x emissions inventory of Luxembourg for manure management and cultivated crops for 2010–2014	9
6. Impact of adjustment on the NMVOC emissions inventory of Luxembourg for manure management and cultivated crops for 2010–2014	9
7. Emission adjustments approved in 2015, as reported by countries in 2016 (in thousands of tons) ..	12
8. Adjustment applications received in 2016 and expert review team recommendations	13

Introduction

1. Conscious of the uncertainties inherent in estimating and projecting emission levels and the need for continuous scientific and methodological improvements, and determined that the emergence of new methodologies should not put a Party at a disadvantage in terms of its emission reduction commitments, at its thirtieth session (Geneva, 30 April–4 May 2012), the Executive Body to the Convention on Long-range Transboundary Air Pollution adopted decisions 2012/3 and 2012/4 to allow Parties to make adjustments under the 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.

2. At its thirty-first session (Geneva, 11–13 December 2012), the Executive Body adopted decision 2012/12 on guidance for such adjustments. The guidance contained in the annex to that decision sets out, in a general way, the principles that Parties should follow in submitting applications for such adjustments.

3. However, following the first review of applications for adjustments by countries in 2014, it became evident that further, detailed technical guidance was needed. At its thirty-third session (Geneva, 8–12 December 2014), the Executive Body therefore adopted decision 2014/1 on improving the guidance for adjustments. The Technical Guidance for Parties Making Adjustment Applications and for the Expert Review of Adjustment Applications (Technical Guidance) (ECE/EB.AIR/130) was prepared by the Task Force on Emission Inventories and Projections and published on 14 April 2015.

4. According to the Executive Body decisions, as clarified by the Technical Guidance, Parties may apply to adjust their inventory data or emission reduction commitments in extraordinary circumstances, which fall into three broad categories:

(a) Emission sources are identified that were not accounted for at the time when the emission reduction commitments were set (for a more detailed definition see decision 2014/1, annex, para. 3 (a) (i)–(iii));

(b) Emission factors used to determine emissions levels for particular source categories for the year in which emissions reduction commitments are to be attained are significantly different than the emission factors applied to these categories when emission reduction commitments were set;

(c) The methodologies used for determining emissions from specific source categories have undergone significant changes between the time when emission reduction commitments were set and the year they are to be attained.

5. Any Party applying for an adjustment to its inventory is required to notify the Convention secretariat through the Executive Secretary of the United Nations Economic Commission for Europe by 15 February at the latest if the application is to be reviewed that year. All supporting information requested in Executive Body decision 2012/12, as amended by decision 2014/1 and clarified in the Technical Guidance, must be provided as part of the Party's Informative Inventory Report, or in a separate report, by 15 March of the same year for a review by the Steering Body to the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP).

6. The present report provides a summary of the 2016 review of applications for adjustments to emission reduction commitments or inventories submitted by two Parties to the Convention — Germany and Luxembourg — in accordance with Executive Body decisions 2012/3, 2012/4, 2012/12 and 2014/1 (see ECE/EB.AIR/111/Add.1, ECE/EB.AIR/113/Add.1 and ECE/EB.AIR/127/Add.1) and following the Technical

Guidance. The report also provides information on adjustments which were approved in years prior to 2016.

7. The report was prepared by the EMEP Centre on Emission Inventories and Projections (CEIP) in line with its mandate under the 2016–2017 workplan for the implementation of the Convention (ECE/EB.AIR/133/Add.1) and the informal document submitted to the Executive Body for the Convention at its thirty-fourth session, “Basic and multi-year activities in the 2016–2017 period” (item 1.7.1). The report is based on the documents submitted by countries plus documents elaborated by the expert review team during the review process in 2016.

I. Overview of 2016 adjustment applications

8. Two parties — Germany and Luxembourg — submitted new applications for adjustments to the Convention secretariat in early 2016. The Parties applied for adjustments to their national emission inventories. The details of the applications are given in table 1 below.

Table 1
Applications for adjustments to emission reduction commitments or inventories in 2016

<i>Country</i>	<i>Sector</i>	<i>NFR source category^a</i>	<i>Pollutant</i>	<i>Years</i>
Germany	Road transport ^b	1A3bi-iv	NO _x	2010–2014
	Agriculture	3Da2c, 3I	NO _x	2010–2014
	Agriculture	3Da2c, 3I	NH ₃	2010–2014
Luxembourg	Agriculture	3B, ^c 3De	NO _x	2010–2014
	Agriculture	3B, ^c 3De	NMVOC	2010–2014

Abbreviations: NFR = Nomenclature for Reporting; NH₃ = ammonia; NMVOC = non-methane volatile organic compound; NO_x = nitrogen oxides.

^a For a description of source categories, see the *EMEP/EEA air pollutant emission inventory guidebook 2013*, EEA Technical report No. 12/2013 (Luxembourg, Publications Office of the European Union, 2013). Available from <http://www.eea.europa.eu/publications/emep-eea-guidebook-2013>.

^b This adjustment was approved in 2015. However, significant revisions had been applied to the methodology and, at its meeting held in Geneva from 14 to 17 March 2016, the Bureau of the Steering Body to EMEP decided to elevate it to a full review process.

^c 3B is used here to denote several selected subcategories, but not the entire source category. See para. 20 below.

II. Organization of the review

9. As mandated by Executive Body decision 2012/12, applications for adjustments submitted by Parties are subject to an expert review. Technical coordination and support for the 2016 review was provided by CEIP, led by Ms. Katarina Mareckova (Slovakia). The members of the review team were selected from the review experts nominated by Parties to the CEIP roster of experts.

10. The adjustment review was performed in parallel with the stage 3 review. The expert review team (ERT) was composed of a lead reviewer, Chris Dore (United Kingdom of Great Britain and Northern Ireland) and eight sectoral experts: Jean-Marc Andre, transport (France); Juan Jose Rincon Cristobal, agriculture (Spain); Giorgos Melios, transport (European Union); Mette H. Mikkelsen, agriculture (Denmark); Yvonne Pang, transport (United Kingdom of Great Britain and Northern Ireland); Ben Pearson, stationary combustion (United Kingdom); Jim Webb, agriculture (United Kingdom); and Dirk Wever, stationary combustion (Netherlands). The ERT assessed the 2016 applications for adjustments and checked the reporting on adjustments approved in years prior to 2016.

11. Each sector was reviewed by two independent sectoral experts during May and June 2016 (desk review). The findings were discussed at a meeting held at the European Environment Agency (EEA) in Copenhagen from 20 to 24 June 2016. The conclusions and recommendations from the review for submission to the EMEP Steering Body were discussed during the review week. They are summarized in chapters III and IV below.

12. CEIP developed a dedicated website with an introduction to the review process, including the roster of experts, documentation and supporting information on adjustments submitted by Parties in 2016 and the adjustments approved in years prior to 2016.¹ In addition, CEIP developed a tool that made it easier for reviewers to assess adjustment application approved prior to 2016 (see para. 43 below).

III. Assessment of applications for adjustments

A. Germany — road transport (1A3bi-iv)

13. Germany submitted information on its road transport adjustment approved in 2014, which included significant recalculations. Owing to the significant recalculations, the Bureau of the Steering Body to EMEP recommended performing a full review of this adjustment. In accordance with the Technical Guidance, the ERT undertook a full and thorough assessment of the information provided by Germany on its adjustment to its nitrogen oxides (NO_x) emissions inventory for 2010–2014 for the road transport sector (Nomenclature for Reporting (NFR) source category 1A3bi-iv).

14. Germany provided information that transparently presented “extraordinary” revisions to emission factors for NO_x, and also clearly quantified the impact of those revisions. The ERT concluded that the application met all of the requirements laid out in Executive Body decision 2012/12 and in the Technical Guidance, and therefore recommended that the EMEP Steering Body accept this updated adjustment. The impact of the adjustment is summarized in table 2 below.

Table 2
Impact of adjustment on the NO_x emissions inventory of Germany for the road transport sector for 2010–2014

NFR source category(ies)	Thousands of tons (ktons) of NO _x				
	2010	2011	2012	2013	2014
1A3bi-iv Road transport	-151.3	-146.9	-145.1	-142.5	-128.1

¹ See http://www.ceip.at/review_proces_intro/review_process/.

B. Germany — organic fertilizer applied to soils (3Da2c) and agriculture other (3I)

15. Germany made an application based on new sources in organic fertilizer applied to soils (3Da2c) and agriculture other (3I) for both NO_x and ammonia (NH₃). The ERT undertook a full and thorough assessment of the application by Germany for an adjustment to its NO_x and NH₃ emissions inventory for 2010–2014 for organic fertilizer applied to soils (3Da2c) and agriculture other (3I).

16. Germany reported NO_x and NH₃ from organic fertilizer applied to soils (3Da2c) and agriculture other (3I) for the first time. More specifically, the emissions in 3Da2c and 3I relate to composting and the storage of digestate from energy crops, respectively. The methodology used is country-specific, as there is no methodology currently included in the *EMEP/EEA air pollutant emission inventory guidebook 2013*² (EMEP/EEA Guidebook).

17. Germany identified NO_x and NH₃ emissions from organic fertilizer applied to soils (3Da2c) and agriculture other (3I) as new sources, which were not accounted for when emission reduction commitments were set. The second edition of the *EMEP/CORINAIR Atmospheric Emission Inventory Guidebook 1999* (1999 Guidebook)³ did not provide methodologies for estimating NO_x and NMVOC from composting and the storage of digestate.

18. The ERT concluded that the adjustment application met all of the requirements laid out in decision 2012/12 and the Technical Guidance, and therefore recommended that the EMEP Steering Body accept this adjustment application. The impact of the adjustments is summarized in tables 3 and 4 below.

Table 3

Impact of adjustment on the NO_x emissions inventory of Germany for organic fertilizer applied to soils and agriculture other for 2010–2014

NFR source category(ies)	Thousands of tons (ktons) of NO _x				
	2010	2011	2012	2013	2014
3.D.a.2.c. Organic fertilizer applied to soils ^a	IE	IE	IE	IE	IE
3.I. Agriculture other	-0.16	-0.18	-0.15	-0.18	-0.19
Total NO_x	-0.16	-0.18	-0.15	-0.18	-0.19

Abbreviations: IE = included elsewhere.

^a The methodology used by Germany is country-specific, and does not allow the NO_x emissions arising from energy crops to be resolved into 3.D.a.2.c, Organic fertilizers applied to soils (including compost), and 3.I, Agriculture other (Storage of digestates from energy crops). As a result, all of the emissions are reported in “Agriculture other” and “IE” (included elsewhere) are reported in 3.D.a.2.c, organic fertilizers applied to soils.

² EEA Technical report No. 12/2013 (Luxembourg, Publications Office of the European Union, 2013). Available from <http://www.eea.europa.eu/publications/emep-eea-guidebook-2013>.

³ Technical report No. 30 (Copenhagen, European Environment Agency, 1999). Available from <http://www.eea.europa.eu/publications/EMEP-CORINAIR>.

Table 4

Impact of adjustment on the NH₃ emissions inventory of Germany for organic fertilizer applied to soils and agriculture other for 2010–2014

<i>NFR source category(ies)</i>	<i>Thousands of tons (ktons) of NH₃</i>				
	<i>2010</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>
3.D.a.2.c. Organic fertilizer applied to soils	-37.03	-46.45	-48.58	-57.83	-62.54
3.I. Agriculture other	-3.00	-3.40	-2.88	-3.31	-3.58
Total NH₃	-40.03	-49.85	-51.46	-61.14	-66.12

19. In its application for an adjustment, Germany noted that, if the proposed adjustments presented in this report are accepted, emissions of NO_x would reach compliance under the 1999 Protocol to Abate Acidification, Eutrophication and Ground-level Ozone (Gothenburg Protocol) (emission ceiling of 1,081 kilotons (ktons)) as of 2010 (1,074 ktons), but emissions of NH₃ would not reach compliance (ceiling of 550 ktons) without further measures.

C. Luxembourg — manure management (3B) and cultivated crops (3De), NO_x and NMVOC

20. Luxembourg made an application based on a new source for both NO_x and non-methane volatile organic compound (NMVOC) adjustments. The ERT undertook a full and thorough assessment of the application by Luxembourg for an adjustment to its NO_x and NMVOC emissions inventory for 2010–2014 for manure management (NFR 3B1a, 3B1b, 3B2, 3B3, 3B4d, 3B4e, 3B4gi-iv (hereafter referred to as “3B”)) and cultivated crops (3De).

21. The reviewers noted that no methodologies for the estimation of NO_x and NMVOC emissions from manure management (including manure application on land) and agricultural soils were included in the 1999 Guidebook. It concluded that the supporting evidence did comply with the criteria presented in decision 2012/3, and that the circumstances on which the adjustment was based could not have been reasonably foreseen by the Party when the emission ceilings were established for 2010.

22. Luxembourg provided information to support its application for an adjustment. During the review, the reviewers requested further information and clarifications from the Party — in particular, information that allowed the reviewers to assess the quantification of the adjusted national totals. The supporting information provided by Luxembourg clearly presented the adjustment totals, but the method of calculation was not transparent. However, as the adjustment application is for a new source, the quantification is defined as being equal to the sectoral emissions, and therefore the reviewers were able to deduce the adjustment values.

23. However, the reviewers were not able to determine whether the quantification of the recalculations, as calculated by Luxembourg, included any calculation errors or was in line with the most up-to-date available EMEP/EEA Guidebook and scientific literature.

24. In the 2016 submission, Luxembourg reported NO_x and NMVOC emissions from manure management category 3B and NMVOC emission from agricultural soils 3D for the first time. Luxembourg explained that this improvement was based on the EMEP/EEA Guidebook, which provided new emission factors for animal husbandry, manure

management and agricultural soils. At the time of setting the reduction commitments no valid methodology was provided by the 1999 Guidebook.

25. As noted in paragraphs 20–24 above, the reviewers were able to deduce the quantification of the adjustments, but were not able to check the underlying calculations in any detail. The reviewers therefore recommend that EMEP Steering Body accept these adjustment applications, but also recommend that a full review of this adjustment, and in particular the methodology, be undertaken in 2017. The impact of proposed adjustments is summarized in table 5 and table 6 below.

26. In its application for an adjustment Luxembourg indicated that, if the proposed adjustments are accepted, its national totals of both NO_x and NMVOC emissions would be below its ceilings in accordance with the Gothenburg Protocol from 2013 onwards, although the reviewers noted that the NMVOC emissions would be below the Gothenburg Protocol ceilings from 2010 onwards.

Table 5
Impact of adjustment on the NO_x emissions inventory of Luxembourg for manure management and cultivated crops for 2010–2014

<i>NFR source category(ies)</i>	<i>Thousands of tons (ktons) of NO_x</i>				
	<i>2010</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>
3B Manure management	-0.05	-0.05	-0.05	-0.05	-0.05
3De Cultivated crops	-0.77	-0.83	-0.78	-0.80	-0.80
Total NO_x	-0.82	-0.88	-0.83	-0.85	-0.85

Table 6
Impact of adjustment on the NMVOC emissions inventory of Luxembourg for manure management and cultivated crops for 2010–2014

<i>NFR source category(ies)</i>	<i>Thousands of tons (ktons) of NMVOC</i>				
	<i>2010</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>
3B Manure management	-2.27	-2.21	-2.17	-2.24	-2.29
3De Cultivated crops	-0.11	-0.11	-0.11	-0.11	-0.11
Total NMVOC	-2.38	-2.32	-2.28	-2.35	-2.40

IV. Assessment of adjustments approved prior to 2016

27. The reviewers assessed the adjustments approved in 2014 and 2015 as reported by Belgium, Denmark, Finland, France, Germany, Luxembourg and Spain in 2016. The detailed information on reported adjustments can be downloaded from the CEIP website.⁴ A summary of reporting on approved adjustments is presented in table 7.

⁴ Full information is available from the CEIP website, see http://www.ceip.at/ms/ceip_home1/ceip_home/adjustments_gp/adj_country_data/.

A. Belgium 2015 — road transport (1A3bi-iv)

28. The reviewers undertook a full and thorough assessment of the adjustment for Belgium regarding NO_x in road transport (1A3bi-iv) originally approved in 2015. The reviewers concluded that the adjustment met all of the requirements laid out in Executive Body decision 2012/12 and in the Technical Guidance. The adjustment has been recalculated, and values have increased by 0.3–2.2 per cent. However, the reviewers concluded that there had been no change in the methodology that would change the original approval of the adjustment application.

B. Belgium — manure management (3B), agricultural soils (3Da1, 3Da2a) and cultivated crops (3De)

29. The reviewers undertook a full and thorough assessment of the adjustments for Belgium regarding NO_x in manure management (3B) and agricultural soils (3Da1, 3Da2a), and regarding NMVOC for manure management (3B) and cultivated crops (3De), all originally approved in 2015. The reviewers concluded that the adjustments met all of the requirements laid out in Executive Body decision 2012/12 and in the Technical Guidance. More specifically, the adjustments for NO_x have been recalculated, and values have decreased by 5 per cent (for 2010–2013) with respect to the previous adjustment values presented in 2015 owing to revisions to the activity data. NMVOC adjustments have also been recalculated, and the value for 2010 has decreased by 22 per cent with respect to the adjustment value approved in 2015 owing to changes in the activity data. Belgium complies with its NMVOC Gothenburg Protocol ceiling from 2011 onwards without the need for an adjustment. The reviewers concluded that there had been no change in the methodology that would change the original approval of these adjustment applications.

C. Denmark — inorganic N-Fertilizers (3D1a), cultivated crops (3De) and manure management (3B)

30. The reviewers undertook a full and thorough assessment of the adjustments for Denmark regarding NH₃ emissions in the inorganic nitrogen (N)-fertilizers (3Da1) and cultivated crops (3De) sectors originally approved in 2014 and in 2015, respectively, and NMVOC emissions for the whole manure management (3B) sector originally approved in 2015. The reviewers concluded that the adjustments met all of the requirements laid out in Executive Body decision 2012/12 and in the Technical Guidance. More specifically, the adjustments for NH₃ are unchanged from the values approved in 2014 and 2015, with no amendments to the methodology. Additionally, the NMVOC adjustment has been recalculated, and values have decreased by 0.23 and 0.70 per cent for 2010 and 2013, respectively, with respect to the previous adjustment values, owing to small changes in the activity data. However, the reviewers concluded that there had been no change in the methodology that would change the original approval of the adjustment application.

D. Finland — stationary combustion (1A2gviii, 1A4ai, 1A4bi, 1A4ci)

31. The reviewers undertook a full and thorough assessment of the adjustments for NH₃ emissions of Finland from the following subsectors originally approved in 2015: 1A2gviii (stationary combustion in manufacturing industries and construction: other); 1A4ai (commercial/institutional: stationary); 1A4bi (residential: stationary); and 1A4ci (agriculture/forestry/fishing: stationary). The reviewers concluded that the adjustments met all of the requirements laid out in Executive Body decision 2012/12 and in the Technical

Guidance. More specifically, the adjustments have been recalculated, and in total values have decreased by approximately 26 per cent. Finland provided a detailed explanation of these recalculations and the reviewers concluded that there had been no change in the methodology that would change the original approval of the adjustment application.

E. Finland — road transport (1A3bi-iv)

32. The reviewers undertook a full and thorough assessment of the adjustment for Finland regarding NH₃ emissions for 1A3bi (passenger cars), 1A3bii (light duty vehicles), 1A3biii (heavy duty vehicles) and 1A3biv (2 wheels vehicles) sectors, originally approved in 2015. Finland provided information to the reviewers explaining that there was an error in the summary tables, but that the detailed calculations were not affected, and hence the adjustment total was not affected. The reviewers studied this information and confirmed that the adjustment total was not affected, and concluded that the adjustment met all of the requirements laid out in Executive Body decision 2012/12 and in the Technical Guidance. More specifically, the adjustment is unchanged from the values approved in 2015, with no amendments to the methodology.

F. France — road transport (1A3bi-iv)

33. The reviewers undertook a full and thorough assessment of the adjustment for France regarding NO_x emissions from road transport (1A3bi-iv) originally approved in 2015. The reviewers concluded that the adjustment met all of the requirements laid out in Executive Body decision 2012/12 and in the Technical Guidance. More specifically, the adjustment has been recalculated, and values have decreased by 5–13 per cent (13 per cent for the year 2010; 5 per cent for the year 2013). However, the reviewers concluded that there had been no change in the methodology that would change the original approval of the adjustment application.

G. Germany — manure management (3B) and cultivated crops (3De)

34. The reviewers undertook a full and thorough assessment of the adjustment for Germany for NO_x and NMVOC emissions in manure management (3B) and cultivated crops (3De) originally approved in 2014 (for NO_x) and 2015 (for NMVOC and NO_x), respectively. The reviewers concluded that the adjustment met all of the requirements laid out in Executive Body decision 2012/12 and in the Technical Guidance. More specifically the adjustment for NO_x has been recalculated, with values increasing by values of less than 10 per cent caused by revisions to the activity data. However there had been no amendments to the methodology.

H. Luxembourg — road transport (1A3bi-iv)

35. The reviewers undertook a full and thorough assessment of the adjustment for Luxembourg of NO_x emissions originating from 1A3bi-iv road transport originally approved in 2015. In response to a question from the reviewers, Luxembourg provided information about the emission factors used in its calculations by Euro emission standard class. The reviewers noted that this information is needed each time the adjustment is assessed. The reviewers concluded that the adjustment met all of the requirements laid out in Executive Body decision 2012/12 and in the Technical Guidance. More specifically the adjustment is unchanged from the values approved in 2015, with no amendments to the methodology.

I Spain — road transport (1A3bi, 1A3biii)

36. The reviewers undertook a full and thorough assessment of the adjustment for Spain regarding NO_x emissions for the 1A3bi (passenger cars) and 1A3biii (heavy duty vehicles) sectors, originally approved in 2015. The reviewers concluded that the adjustment met all of the requirements laid out in Executive Body decision 2012/12 and in the Technical Guidance. More specifically, the adjustment is unchanged from the values approved in 2015, with no amendments to the methodology.

V. Conclusions and recommendations

A. Adjustment cases prior to 2016

37. Table 7 provides a summary of adjusted emissions accepted by the ERT during the review performed in May and June 2015, as reported by Belgium, Denmark, Finland, France, Germany, Luxembourg and Spain in 2016. The reported adjustments refer to NO_x, NMVOC and NH₃ emissions for various NFR sectors. The more detailed information regarding each reported adjustment can be found in chapter IV of this report.

38. The ERT assessed the reported data and concluded that the adjustments met all of the requirements laid out in Executive Body decision 2012/12 and in the Technical Guidance, and therefore recommended that the EMEP Steering Body accept all adjustments as reported by Belgium, Denmark, Finland, France, Germany, Luxembourg and Spain (see table 7).

Table 7

**Emission adjustments approved in 2015, as reported by countries in 2016
 (in thousands of tons)**

<i>Reference number</i>	<i>Pollutant</i>	<i>NFR</i>	<i>2010</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>
Belgium-A	NO _x	1A3bi-iv	-48.20	-47.95	-47.33	-47.58	-45.16
Belgium-B	NO _x	3B	-0.38	-0.37	-0.37	-0.37	-0.37
Belgium-B	NMVOC	3B	-28.24	N/A	N/A	N/A	N/A
Belgium-C	NO _x	3Da	-12.84	-12.45	-12.08	-11.98	-11.88
Belgium-C	NMVOC	3De	-1.22	N/A	N/A	N/A	N/A
Total (Belgium)	NO_x		-61.41	-60.77	-59.78	-59.93	-57.41
Total (Belgium)	NMVOC		-29.46	N/A	N/A	N/A	N/A
Denmark_01	NH ₃	3Da1	-3.67	-3.42	-3.30	-3.75	-3.73
Denmark_02	NH ₃	3De	-5.41	-5.42	-5.40	-5.37	-5.45
Denmark_03	NMVOC	3B	-35.44	-35.31	-35.66	-35.88	-35.74
Total (Denmark)	NH₃		-9.08	-8.84	-8.70	-9.13	-9.18
Total (Denmark)	NMVOC		-35.44	-35.31	-35.66	-35.88	-35.74
Finland	NH ₃	1A2gviii, 1A4	-0.48	-0.37	-0.39	-0.35	-0.36
Finland	NH ₃	1A3bi-iv	-1.53	-1.44	-1.34	-1.26	-1.21
Total (Finland)	NH₃		-2.01	-1.81	-1.73	-1.61	-1.57

<i>Reference number</i>	<i>Pollutant</i>	<i>NFR</i>	<i>2010</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>
France	NO _x	1A3bi-iv	-146.91	-153.00	-150.10	-151.20	-145.55
Total (France)	NO_x	1A3bi-iv	-146.91	-153.00	-150.10	-151.20	-145.55
Germany	NO _x	3B, 3De	-110.82	-121.23	-116.88	-119.62	-122.14
Germany	NMVOC	3B, 3De	-201.23	-200.69	-204.13	-208.68	-211.04
Total (Germany)	NO_x		-110.82	-121.23	-116.88	-119.62	-122.14
Total (Germany)	NMVOC		-201.23	-200.69	-204.13	-208.68	-211.04
Luxembourg	NO _x	1A3bi-iv	-2.70	-2.87	-2.97	-3.02	-3.02
Total (Luxembourg)	NO_x		-2.70	-2.87	-2.97	-3.02	-3.02
Spain	NO _x	1A3bi,iii	-126.97	-121.42	-111.22	N/A	N/A
Total (Spain)	NO_x		-126.97	-121.42	-111.22	N/A	N/A

B. 2016 adjustment cases

39. Applications made by Germany and Luxembourg in 2016 for adjustments were assessed. In both cases the ERT determined that additional information was needed from the Parties to enable a sufficiently detailed review. Both Parties provided additional information. Based on the additional information provided, the ERT recommended that the adjustment applications for the two Parties be accepted .

40. Table 8 below provides a summary of the adjustment applications received in 2016, and the subsequent ERT recommendations to the EMEP Steering Body.

Table 8

Adjustment applications received in 2016 and expert review team recommendations

<i>Country</i>	<i>Sector</i>	<i>NFR</i>	<i>Pollutant</i>	<i>Years</i>	<i>ERT recommendation</i>
Germany	Road transport	1A3bi-iv	NO _x	2010–2014	Accept
Germany	Agriculture	3Da2c, 3I	NO _x	2010–2014	Accept
Germany	Agriculture	3Da2c, 3I	NH ₃	2010–2014	Accept
Luxembourg	Agriculture	3B, 3De	NO _x	2010–2014	Accept
Luxembourg	Agriculture	3B, 3De	NMVOC	2010–2014	Accept

41. The detailed conclusions and recommendations regarding each 2016 adjustment application can be found in chapter III of this report. The ERT has prepared country-specific reports containing detailed explanations of the findings. These explanations will be made available to the Parties and will also be published on the CEIP website.⁵ The country-specific reports of Germany and Luxembourg will be available as informal documents for the second session of the EMEP Steering Body and the Working Group on Effects.

⁵ See www.ceip.at/adjustments_gp/.

42. The 2016 review represents further improvement in the adjustment review process. The updated and more comprehensive guidance assisted the Parties and the ERT in the review process, although additional information was still required by the ERT from several Parties.

43. In 2016, there has been a change in the demands on the ERT in that there are considerably more previously approved adjustments to review, and fewer new applications. This has meant different demands on the ERT. However, with three years' experience to draw on, the review process is now considerably more established, and also more efficient. CEIP also developed an online tool,⁶ which allows for a more efficient check of approved adjustments.

44. CEIP notes that Germany funded the participation of national experts in the 2016 review process (the stage 3 review or the adjustments review), but Luxembourg did not.

C. Recommendations from the reviewers

45. The "Declaration on consistent reporting of approved adjustments" provided by countries on a voluntary basis was evaluated by the reviewers and was considered to be helpful in making the assessment process more efficient. It is recommended that the EMEP Steering Body recommend countries to submit — on an annual basis — such a statement along with the submission of the respective annex VII⁷ to the Guidelines for Reporting Emissions and Projections Data under the Convention on Long-range Transboundary Air Pollution (ECE/EB.AIR/125).

46. In the road transport sector there is a need for Parties to provide transparent information about the emission factors applied when making the "original" emission estimates for target years beyond the validity of the emission factors. For this calculation, the reviewers consider it best practice to continue to use Euro 4 emission standards, as this reflects the information that was available at the time, rather than the emission factors which were established after 2010 emission ceilings were agreed.

47. It is important that Parties continue to use the same reporting format when reporting on previously approved adjustments, i.e., using the same units and the same level of aggregation across the emission source sectors. This will help to ensure that the data handling systems can process the information provided in different submissions in a consistent way.

⁶ See http://webdab.umweltbundesamt.at/cgi-bin/adj.pl?p_iso2B=ALL&p_subm_yearB=2016&p_pollutantB=ALL.

⁷ Available at: www.ceip.at/reportinginstructions/annexes-to-the-reporting-guidelines/.