

## **Economic and Social Council**

Distr.: General  
6 July 2015

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**

**First joint session\***

Geneva, 14–18 September 2015

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 to emission reduction  
commitments or to inventories for the purposes of comparing  
total national emissions with them**

### **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 2014–2015 workplan for the implementation of the Convention on Long-range Transboundary Air Pollution (ECE/EB.AIR/122/Add.2, item 1.7.1) and is based on documents submitted by Parties and findings of the expert review team.

The report provides a summary of the 2015 review of applications for adjustments to emission reduction commitments or inventories submitted by seven Parties to the

---

\* 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)).

Convention — Belgium, Denmark, Finland, France, Germany, Luxembourg and Spain — 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, ECE/AB.AIR/127/Add.1 and ECE/EB.AIR/130).

The report also provides information on reporting by Denmark and Germany of adjustments approved in 2014.

## Contents

	<i>Paragraphs</i>	<i>Page</i>
Introduction .....	1–7	5
I. Overview of 2015 adjustment applications .....	8–9	6
II. Organization of the review .....	10–12	7
III. Assessment of applications for adjustments .....	13–53	7
A. Belgium — road transport (1A3bi-iv) .....	13–15	7
B. Belgium — manure management and agricultural soils (3B, 3Da1, 3Da2a, 3De) .....	16–22	8
C. Denmark — manure management (3B) .....	23–27	9
D. Finland — stationary combustion (1A2gviii, 1A4ai, 1A4bi, 1A4ci) .....	28–31	10
E. Finland — road transport (1A3bi-iv) .....	32–35	11
F. Finland — manure management (3B) .....	36–38	11
G. France — mobile machinery (1A2gvii, 1A4cii) .....	39–40	12
H. France — road transport (1A3bi-iv) .....	41–43	12
I. Germany — manure management and cultivated crops (3B, 3De) .....	44–46	13
J. Luxembourg — road transport (1A3bi-iv) .....	47–49	13
K. Spain — road transport (1A3bi, 1A3biii) .....	50–53	14
IV. Conclusions and recommendations .....	54–62	15
A. 2014 adjustment cases .....	54–55	15
B. 2015 adjustment cases .....	56–62	15

## Tables

1. Applications for adjustments to emission reduction commitments or inventories in 2015 .....	6
2. Impact of adjustment on the NO <sub>x</sub> emissions inventory of Belgium for the road transport sector for 2010–2013 .....	8
3. Impact of adjustment on the NO <sub>x</sub> emissions inventory of Belgium for the manure management and agricultural soils sectors for 2010–2013 .....	9
4. Impact of adjustment on the NMVOC emissions inventory of Belgium for the manure management and cultivated crops sectors for 2010–2013 .....	9
5. Impact of adjustment on the NMVOC emissions inventory of Denmark for the manure management sector for 2010–2013 .....	10
6. Impact of adjustment on the NH <sub>3</sub> emissions inventory of Finland for the stationary sector for 2010–2013 .....	10
7. Impact of adjustment on the NH <sub>3</sub> emissions inventory of Finland for the road transport sector for 2010–2013 .....	11
8. Impact of adjustment on the NO <sub>x</sub> emissions inventory of France for the road transport sector for 2010–2013 .....	12

9.	Impact of adjustment on the NMVOC emissions inventory of Germany for the manure management and cultivated crops sectors for 2010–2013.....	13
10.	Impact of adjustment on the NO <sub>x</sub> emissions inventory of Luxembourg for the road transport sector for 2010–2013.....	14
11.	Impact of adjustment on the NO <sub>x</sub> emissions inventory of Spain for the road transport sector for 2010–2012.....	14
12.	Emission adjustments approved in 2014, as reported by countries in 2015 .....	15
13.	Adjustment applications received and expert review team recommendations .....	15

## 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 2015 review of applications for adjustments to emission reduction commitments or inventories submitted by seven Parties to the Convention — Belgium, Denmark, Finland, France, Germany, Luxembourg and Spain — 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 two countries' adjustments, Denmark and Germany, which were approved in 2014.

7. The report was prepared by the EMEP Centre on Emission Inventories and Projections (CEIP) in line with its mandate under the 2014–2015 workplan for implementation of the Convention on Long-range Transboundary Air Pollution (ECE/EB.AIR/122/Add.2, 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 2015.

## I. Overview of 2015 adjustment applications

8. Seven parties — Belgium, Denmark, Finland, France, Germany, Luxembourg and Spain — submitted applications for adjustments to the Convention secretariat in early 2015. 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 2015**

<i>Country</i>	<i>Sector</i>	<i>NFR source category<sup>a</sup></i>	<i>Pollutant</i>	<i>Years</i>
Belgium	Road transport	1A3bi-iv	NO <sub>x</sub>	2010–2013
	Manure management	3B	NO <sub>x</sub>	2010–2013
	Agricultural soils	3Da1, 3Da2a	NO <sub>x</sub>	2010–2013
	Manure management	3B	NMVOC	2010–2013
	Cultivated crops	3De	NMVOC	2010–2013
Denmark	Manure management	3B	NMVOC	2010–2013
Finland	Stationary combustion	1A2gviii, 1A4ai, 1A4bi, 1A4ci,	NH <sub>3</sub>	2010–2013
	Road transport	1A3bi-iv	NH <sub>3</sub>	2010–2013
	Manure management	3B	NH <sub>3</sub>	2010–2013
France	Mobile machinery	1A2gvii, 1A4cii	NO <sub>x</sub>	2010–2013
	Road transport	1A3bi-iv	NO <sub>x</sub>	2010–2013
Germany	Manure management	3B	NMVOC	2010–2013
	Agricultural soils	3D	NMVOC	2010–2013
Luxembourg	Road transport	1A3bi-iv	NO <sub>x</sub>	2010–2013
Spain	Road transport	1A3bi, 1A3biii	NO <sub>x</sub>	2010–2012

*Abbreviations:* NFR = Nomenclature for Reporting; NH<sub>3</sub> = ammonia; NMVOC = non-methane volatile organic compound; NO<sub>x</sub> = nitrogen oxides.

<sup>a</sup> 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>

9. CEIP developed a dedicated website<sup>1</sup> with an introduction to the review process, documentation and supporting information on adjustments submitted by Parties in 2015 and the adjustments approved in 2014.

## II. Organization of the review

10. 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 2015 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.<sup>2</sup>

11. 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: Michael Anderl, agriculture (European Union (EU)); Jean-Marc Andre, transport (France); Tomas Gustafsson, stationary energy (Sweden); Melanie Hobson, transport (European Union (EU)); Michael Kotzulla, transport (Germany); Yvonne Pang, transport; Stephan Poupa, stationary energy (Austria); and Jim Webb, agriculture (United Kingdom). The ERT assessed the 2015 applications for adjustments, and checked the reporting on adjustments that were approved in 2014.

12. Each sector was reviewed by two independent sectoral experts during May and June 2015 (desk review). The findings were discussed at a meeting held at the European Environment Agency (EEA) in Copenhagen from 22 to 26 June 2015. 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.

## III. Assessment of applications for adjustments

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

13. The ERT undertook a full and thorough assessment of the application by Belgium for an adjustment to its nitrogen oxides (NO<sub>x</sub>) emissions inventory for 2010–2013 for the road transport sector (Nomenclature for Reporting (NFR) source category 1A3bi-iv).

14. Belgium provided information that transparently presented “extraordinary” revisions to emission factors for NO<sub>x</sub>, 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 adjustment application. The impact of the adjustment is summarized in table 2 below.

---

<sup>1</sup> See [www.ceip.at/adjustments\\_gp/](http://www.ceip.at/adjustments_gp/).

<sup>2</sup> See [www.ceip.at/fileadmin/inhalte/emep/pdf/2015/0\\_Roster\\_2015.pdf](http://www.ceip.at/fileadmin/inhalte/emep/pdf/2015/0_Roster_2015.pdf).

Table 2

**Impact of adjustment on the NO<sub>x</sub> emissions inventory of Belgium for the road transport sector for 2010–2013**

NFR source category(ies)	Thousands of tons (ktons) of NO <sub>x</sub>			
	2010	2011	2012	2013
1A3bi-iv Road transport	-47.98	-47.77	-47.17	-46.54

15. In the document provided to the ERT,<sup>3</sup> Belgium indicated the year in which it would comply with its NO<sub>x</sub> ceiling for the 1999 Protocol to Abate Acidification, Eutrophication and Ground-level Ozone (Gothenburg Protocol). Based on the emission factors used in the COPERT IV model<sup>4</sup> (version 11.2), compliance will be achieved in 2015. The ERT noted, however, that the developments concerning the Euro 6 emission standard<sup>5</sup> and the New European Driving Cycle might delay the compliance until 2020.

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

16. The ERT undertook a full and thorough assessment of the application by Belgium for an adjustment to its NO<sub>x</sub> and NMVOC emissions inventory for 2010–2013 for the manure management sector (NFR 3B1a, 3B1b, 3B2, 3B3, 3B4d, 3B4e, 3B4f, 3B4gi,ii, 3B4iv and 3B4h (henceforth referred as 3B)) and for the agricultural soils sector (NFR 3Da1, 3Da2a and 3De).

17. In the 2015 submission, Belgium reported NO<sub>x</sub> and NMVOC emissions from manure management (NFR category 3B) and NO<sub>x</sub> emissions from animal manure applied to soils (NFR 3Da2a) for the first time. The improvement is based on the *EMEP/EEA air pollutant emission inventory guidebook 2013*<sup>6</sup> (EMEP/EEA Guidebook) which provides new default emission factors (EFs) for manure management (3B) and inorganic N-fertilizers (3Da1), applied also for animal manure application (3Da2a) by Belgium.

18. Belgium identified NO<sub>x</sub> and NMVOC emissions from manure management 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)<sup>7</sup> did not provide methodologies for estimating NO<sub>x</sub> and NMVOC emissions from animal husbandry and manure management (including the application of animal manure on soils).

19. For the 2015 submission, Belgium estimated NO<sub>x</sub> emissions from inorganic nitrogen (N)-fertilizers (NFR 3Da1) for the first time. This source was identified as a new source by Belgium. At the time of setting the reduction commitments no methodology was provided by the 1999 Guidebook.

<sup>3</sup> See [webdab.umweltbundesamt.at/download/adjustments2015/BE\\_AdjApp2015.zip?cgiproxy\\_skip=1](http://webdab.umweltbundesamt.at/download/adjustments2015/BE_AdjApp2015.zip?cgiproxy_skip=1).

<sup>4</sup> See <http://emis.com/copert>.

<sup>5</sup> See <http://ec.europa.eu/environment/air/transport/road.htm>.

<sup>6</sup> 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>.

<sup>7</sup> Technical report No. 30 (Copenhagen, European Environment Agency, 1999). Available from <http://www.eea.europa.eu/publications/EMEP-CORINAIR>.

20. In the 2015 submission, Belgium reported NMVOC emissions from cultivated crops (NFR 3De) for the first time. This source was identified as a new source by Belgium. At the time of setting the reduction commitments no methodology was provided by the 1999 Guidebook.

21. 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<sub>x</sub> emissions inventory of Belgium for the manure management and agricultural soils sectors for 2010–2013**

NFR source category(ies)	Thousands of tons (ktons) of NO <sub>x</sub>			
	2010	2011	2012	2013
3B Manure management	-0.39	-0.38	-0.38	-0.37
3Da1 Inorganic N-fertilizers	-5.94	-5.85	-5.64	-5.73
3Da2a Animal manure applied to soils	-7.60	-7.29	-7.07	-6.95

Table 4  
**Impact of adjustment on the NMVOC emissions inventory of Belgium for the manure management and cultivated crops sectors for 2010–2013**

NFR source category(ies)	Thousands of tons (ktons) of NMVOC			
	2010	2011	2012	2013
3B Manure management	-36.59	-35.90	-35.60	-35.37
3De Cultivated crops	-1.22	-1.20	-1.19	-1.19

22. Belgium indicated that its national totals of both NO<sub>x</sub> and NMVOC emissions would be below the respective ceilings in accordance with the Gothenburg Protocol from 2010 onwards, if the proposed adjustments are accepted.

### C. Denmark — manure management (3B)

23. The ERT undertook a full and thorough assessment of the application by Denmark for an adjustment to its NMVOC emissions inventory for 2010–2013 for the manure management sector (NFR 3B1a, 3B1b, 3B2, 3B3, 3B4d, 3B4e, 3B4gi-iv and 3B4h (henceforth referred as 3B)).

24. In the 2015 submission, Denmark reported NMVOC emissions from manure management sector (NFR 3B) for the first time. The improvement to the inventory is based on the EMEP/EEA Guidebook, which includes default EFs for the estimation of NMVOC emissions for the first time.

25. Denmark identified NMVOC emissions from manure management as a new source, which was not accounted for at the time when emission reduction commitments were set. In

the 1999 Guidebook no methodology for estimating NMVOC emissions from manure management was included.

26. 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 adjustment application. The impact of the adjustment is summarized in table 5 below.

Table 5  
**Impact of adjustment on the NMVOC emissions inventory of Denmark for the manure management sector for 2010–2013**

NFR source category(ies)	Thousands of tons (ktons) of NMVOC			
	2010	2011	2012	2013
3B Manure management	-35,52	-35,45	-35,85	-36,13

27. The national total NMVOC emissions for Denmark will be below its ceiling in accordance with the Gothenburg Protocol from 2010 onwards, if the proposed adjustments are accepted.

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

28. The ERT undertook a full and thorough assessment of the application by Finland for an adjustment to its NH<sub>3</sub> emissions inventory for 2010–2013 for the stationary combustion sector, (NFR 1A2gviii, 1A4ai, 1A4bi and 1A4ci).

29. Finland applied for an adjustment to its emissions inventory for NH<sub>3</sub> under the Gothenburg Protocol by submitting adjusted NH<sub>3</sub> emissions for 2010–2013 to demonstrate that it used different EFs to those which were available when its Gothenburg Protocol ceilings were set.

30. Finland applied for an adjustment based on changes in the NH<sub>3</sub> EFs. The 1999 Guidebook is considered as the source of standard methodologies when the emission ceilings were set. The 1999 Guidebook included NH<sub>3</sub> default EFs for biomass and coal (chapter 01, Table 11). Finland for its 1990–2013 emission inventory currently uses NH<sub>3</sub> EFs that are different from those used according to the 1999 Guidebook. In particular, the EFs for biomass are higher than those in the 1999 Guidebook.

31. The ERT concluded that the application by Finland for an adjustment to emissions from the energy sector met the requirements laid out in in EB decision 2012/12 and in the Technical Guidance, and therefore recommended that the EMEP Steering Body accept this adjustment application. The impact of the adjustment is summarized in table 6 below.

Table 6  
**Impact of adjustment on the NH<sub>3</sub> emissions inventory of Finland for the stationary combustion sector for 2010–2013**

NFR source category(ies)	Thousands of tons (ktons) of NH <sub>3</sub>			
	2010	2011	2012	2013
1A2gviii Stationary combustion	0.015	0.014	0.017	0.015

NFR source category(ies)	Thousands of tons (ktons) of NH <sub>3</sub>			
	2010	2011	2012	2013
1A4ai, 1A4bi, 1A4ci Stationary combustion	-0.545	-0.427	-0.523	-0.478

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

32. The ERT undertook a full and thorough assessment of the application by Finland for an adjustment to its NH<sub>3</sub> emissions inventory for 2010–2013 for the road transport sector (NFR 1A3bi-iv).

33. Finland provided information to support its application for an adjustment, which was based on NH<sub>3</sub> EFs for the transport sector being significantly different. This was on the basis that the NH<sub>3</sub> EFs in the 1999 Guidebook are significantly different to those provided in the EMEP/EEA Guidebook. Finland had not included NH<sub>3</sub> emissions from the transport sector in their inventory until their 2005 submission. However, to provide a basis for determining whether the EF has significantly changed, a comparison of the 1999 Guidebook and EMEP/EEA Guidebook was undertaken.

34. A “change to an emission factor” is defined as when EFs used to determine emissions levels for particular source categories for the year in which emissions reduction commitments are to be attained are significantly different from the EFs applied to these categories when emission reduction commitments were set. A comparison of the NH<sub>3</sub> EFs shows that there is a significant difference between the two data sets.

35. The ERT concluded that the application by Finland for an adjustment to emissions from the road transport sector met the requirements laid out in decision 2012/12, and therefore recommended that the EMEP Steering Body accept this adjustment application. The impact of the adjustment is summarized in table 7 below.

Table 7

### Impact of adjustment on the NH<sub>3</sub> emissions inventory of Finland for the road transport sector for 2010–2013

NFR source category(ies)	Thousands of tons (ktons) of NH <sub>3</sub>			
	2010	2011	2012	2013
1A3bi-iv Road transport	-1.52	-1.44	-1.34	-1.26

## F. Finland — manure management (3B)

36. The ERT undertook a full and thorough assessment of the application by Finland based on the “revision to emission factors” criteria for NH<sub>3</sub> EFs for 2010–2013 in the manure management sector (NFR 3B1a, 3B1b, 3B2, 3B3, 3B4d, 3B4e, 3B4gi-iv and 3B4h (henceforth referred to as 3B)).

37. The ERT noted that the basis of the application was that N excretion from livestock had increased since the ceilings were set in 1999. However the ERT consider N excretion to be activity data, and not a component of an EF. In addition, the ERT considered that applying year-specific N excretion values (rather than a fixed value) did not represent a change in methodology. The ERT recognized that it was good practice to revise input data

when productivity and farming practices changed, but considered that particular example to constitute a routine emissions inventory development. Consequently the ERT were of the view that the application for an NH<sub>3</sub> adjustment did not meet the requirements laid out in Executive Body decision 2012/12. In particular, the ERT noted that the application was not based on one of the three circumstances listed in paragraph 6 of decision 2012/3, as amended by decision 2014/1. Therefore, the ERT recommended that the EMEP Steering Body reject this adjustment application.

38. Finland did not inform the ERT when the emission ceilings would be reached. However, Finland noted that it continued implementing measures to abate ammonia emissions and would further develop the inventory to timely reflect impacts of the measures on the emission levels.

### G. France — mobile machinery (1A2gvii, 1A4cii)

39. The ERT commenced an assessment of the application by France for an adjustment to its NO<sub>x</sub> emissions inventory for 2010–2013 for the off-road mobile machinery sector (NFR A2gvii and 1A4cii). However, from the information provided by the Party, the ERT concluded that the increase in emission estimates from those source categories (compared with the assumptions made in 1999) resulted from the implementation of revised and reallocated activity data that allowed the application of specific EFs that were much higher than those applied in the Party’s earlier submissions. That improvement in the inventory with respect to its correctness and transparency was not considered by the ERT to be “extraordinary”, but a routine inventory development.

40. The ERT discussed their views with the Party, noting that the application was not considered to be based on one of three circumstances listed in paragraph 6 of Executive Body decision 2012/3, as amended by decision 2014/1. After considering several options, France withdrew this adjustment application.

### H. France — road transport (1A3bi-iv)

41. The ERT undertook a full and thorough assessment of the application by France for an adjustment to its NO<sub>x</sub> emissions inventory for 2010–2013 for the road transport sector (NFR 1A3bi-iv).

42. France provided information that transparently presented “extraordinary” revisions to EFs and methodology for NO<sub>x</sub>, and also clearly quantified the impact of those revisions. The ERT concluded that the application met all of the requirements laid out in decision 2012/12 and in the Technical Guidance, and therefore recommended that the EMEP Steering Body accept this adjustment application. The impact of the adjustment is summarized in table 8 below.

Table 8  
**Impact of adjustment on the NO<sub>x</sub> emissions inventory of France for the road transport sector for 2010–2013**

NFR source category(ies)	Thousands of tons (ktons) of NO <sub>x</sub>			
	2010	2011	2012	2013
1A3bi-iv Road transport	-168.56	-169.83	-162.75	-159.84

43. The national total emissions for France will be below its ceilings in accordance with the Gothenburg Protocol from 2012 onwards, if the proposed adjustments are accepted.

## I. Germany — manure management and cultivated crops (3B, 3De)

44. The ERT undertook a full and thorough assessment of the application by Germany for an adjustment to its NMVOC emissions inventory for 2010–2013 for the manure management and cultivated crops sectors (NFR 3B1a, 3B1b, 3B2, 3B3, 3B4d, 3B4e, 3B4gi-iv (henceforth referred as 3B) and 3De).

45. Germany reported NMVOC emissions from the manure management and cultivated crops sectors between 2004 and 2011. However, these NMVOC emissions were not included in the inventory when emission reduction commitments were set in 1999, and no EFs or methodologies were included in the 1999 Guidebook. In addition, NMVOC emissions between 2004 and 2011 were calculated using the EFs cited in the then-current version of the EMEP/EEA Guidebook. The respective chapter was revised in 2012 because the previously published data were no longer regarded as reliable. The EMEP/EEA Guidebook provides new EFs for manure management (3B) and cultivated crops (3De). Thus, NMVOC emissions were recalculated for the national inventory using the revised EFs provided in the EMEP/EEA Guidebook. The ERT concluded that the application met all of the requirements laid out in decision 2012/12 and in the Technical Guidance and therefore recommended that the EMEP Steering Body accept this adjustment application. The impact of the adjustment is summarized in table 9 below.

Table 9

### Impact of adjustment on the NMVOC emissions inventory of Germany for the manure management and cultivated crops sectors for 2010–2013

NFR source category(ies)	Thousands of tons (ktons) of NMVOC			
	2010	2011	2012	2013
3B Manure management	-191.74	-191.71	-194.13	-198.39
3De Cultivated crops	-9.49	-8.99	-10.02	-10.32

46. In its application for an adjustment, Germany noted that emissions of NMVOCs could reach compliance under the Gothenburg as of 2011, if the proposed adjustments are accepted.

## J. Luxembourg — road transport (1A3bi-iv)

47. The ERT undertook a full and thorough assessment of the application by Luxembourg for an adjustment to its NO<sub>x</sub> emissions inventory for 2010–2013 for the road transport sector (NFR 1A3bi-iv).

48. Luxembourg provided information that transparently presented “extraordinary” revisions to EFs for NO<sub>x</sub>, and also clearly quantified the impact of those revisions. The ERT concluded that the application met all of the requirements laid out in decision 2012/12 and in the Technical Guidance, and therefore recommended that the EMEP Steering Body accept the adjustment application. The impact of the adjustment is summarized in table 10 below.

Table 10  
**Impact of adjustment on the NO<sub>x</sub> emissions inventory of Luxembourg for the road transport sector for 2010–2013**

NFR source category(ies)	Thousands of tons (ktons) of NO <sub>x</sub>			
	2010	2011	2012	2013
1A3bi-iv Road transport	-2.70	-2.87	-2.97	-3.02

49. Luxembourg indicated that its emission inventory would meet the NO<sub>x</sub> ceiling target under the Gothenburg Protocol from 2013 onwards if the proposed adjustment is accepted.

### K. Spain — road transport (1A3bi, 1A3biii)

50. The ERT undertook a full and thorough assessment of the application by Spain for an adjustment of its NO<sub>x</sub> emissions inventory for 2010–2012 for the road transport sector (NFR 1A3bi and 1A3biii).

51. Spain provided information to support its application for an adjustment based on revisions to EFs. During the review, the ERT requested additional information from Spain. In particular, information was requested to demonstrate that calculations within the emissions models to quantify the adjustment were appropriate and correct. Spain explained that it was not able to provide the requested documentation because the Spanish national data repository started in 2002. Following discussions between the ERT and the Party, Spain provided a quantification of the adjustment that used COPERT III EFs (instead of COPERT II) as the original EFs — which the ERT consider to be a conservative approach.

52. The ERT concluded that the application met all of the requirements laid out in Executive Body decision 2012/12 and the Technical Guidance, and therefore recommended that the EMEP Steering Body accept the adjustment application. The impact of the adjustment is summarized in table 11 below.

Table 11  
**Impact of adjustment on the NO<sub>x</sub> emissions inventory of Spain for the road transport sector for 2010–2012**

NFR source category(ies)	Thousands of tons (ktons) of NO <sub>x</sub>		
	2010	2011	2012
1A3bi, 1Abiii Road transport	-126.97	-121.42	-111.22

53. Spain informed the review team that, if the adjustment were accepted, then it was expected that emissions of NO<sub>x</sub> would reach compliance under the Gothenburg Protocol as of 2013.

## IV. Conclusions and recommendations

### A. 2014 adjustment cases

54. Table 12 provides a summary of adjusted emissions accepted by the ERT during the review performed in May and June 2014 as reported by Denmark and Germany in 2015. The adjusted emissions reported by Denmark for 2010–2012 are identical to the values approved in 2014. The quantities reported by Germany differ by between 0.13 per cent and 0.57 per cent compared with those approved in 2014.

55. 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 the reported adjustments for both Denmark and Germany.

Table 12

#### Emission adjustments approved in 2014, as reported by countries in 2015 (in thousands of tons)

Reference number	Pollutant	NFR	2010	2011	2012	2013
Germany-A	NO <sub>x</sub>	1A3b	-101.00	-96.00	-91.00	-86.00
Germany-B	NO <sub>x</sub>	3B	-2.06	-2.03	-2.00	-2.01
Germany-C	NO <sub>x</sub>	3D	-102.26	-111.06	-105.91	-106.75
<b>Germany total</b>	<b>NO<sub>x</sub></b>		<b>-205.32</b>	<b>-209.09</b>	<b>-198.91</b>	<b>-194.76</b>
Denmark_01	NH <sub>3</sub>	3Da1	-3.67	-3.42	-3.30	-3.75
Denmark_02	NH <sub>3</sub>	3De	-5.41	-5.42	-5.40	-5.37
<b>Denmark total</b>	<b>NH<sub>3</sub></b>		<b>-9.08</b>	<b>-8.84</b>	<b>-8.70</b>	<b>-9.13</b>

### B. 2015 adjustment cases

56. Applications made by all seven Parties in 2015 for adjustments were assessed. In several cases the ERT determined that additional information was needed from Parties to enable a sufficiently detailed review. All Parties amended the basis of their submission after discussions with the ERT, to allow the ERT to recommend acceptance.

57. Table 13 below provides a summary of the adjustment applications received, and the subsequent ERT recommendations to the EMEP Steering Body.

Table 13

#### Adjustment applications received and expert review team recommendations

Country	Sector	NFR	Pollutant	Years	ERT recommendation
Belgium	Road transport	1A3bi-iv	NO <sub>x</sub>	2010–2013	Accept
	Manure management	3B	NO <sub>x</sub>	2010–2013	Accept
	Agricultural soils	3Da1, 3Da2a	NO <sub>x</sub>	2010–2013	Accept

<i>Country</i>	<i>Sector</i>	<i>NFR</i>	<i>Pollutant</i>	<i>Years</i>	<i>ERT recommendation</i>
	Manure management	3B	NMVOC	2010–2013	Accept
	Cultivated crops	3De	NMVOC	2010–2013	Accept
Denmark	Manure management	3B	NMVOC	2010–2013	Accept
Finland	Stationary combustion	1A2gviii, 1A4ai, 1A4bi, 1A4ci	NH <sub>3</sub>	2010–2013	Accept
	Road transport	1A3bi-iv	NH <sub>3</sub>	2010–2013	Accept
	Manure management,	3B	NH <sub>3</sub>	2010–2013	Reject
France	Road transport	1A3bi-iv	NO <sub>x</sub>	2010–2013	Accept
Germany	Manure management	3B	NMVOC	2010–2013	Accept
	Cultivated crops	3De	NMVOC	2010–2013	Accept
Luxembourg	Road transport	1A3bi-iv	NO <sub>x</sub>	2010–2013	Accept
Spain	Road transport	1A3bi, 1A3biii	NO <sub>x</sub>	2010–2012	Accept

*Note:* Adjustment application of France for sector Mobile machinery (NFR categories 1A2gvii, 1A4aii) has been withdrawn by country.

58. The detailed conclusions and recommendations regarding each adjustment application can be found in section 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.<sup>8</sup> The country-specific reports will be available as informal documents for the first joint session of the EMEP Steering Body and the Working Group on Effects.

59. The 2015 review represents a considerable improvement compared with the 2014 review. The updated and more comprehensive guidance assisted the Parties and the ERT with the review process. In addition, the ERT was of the strong opinion that the improved guidance and availability of case studies have helped Parties with their submissions — although additional information was required by the ERT from all Parties.

60. The ERT noted that there were examples of submissions in 2015 that would make particularly useful case studies. For example, France had initially made an adjustment application for the mobile machinery source sector, but withdrew that application after some discussion with the ERT. Sharing the reasons behind the withdrawal with other Parties would be valuable.

61. In future years there will be the burden of reviewing an increasing number of approved adjustments (to ensure that adjusted emissions continue to be reported appropriately). At present there is no documented process for this, or an agreed approach to storing the relevant information. Guidance should be drafted for this process, and the Steering Body should also consider development of a suitable data handling system.

<sup>8</sup> See [www.ceip.at/adjustments\\_gp/](http://www.ceip.at/adjustments_gp/).

62. CEIP notes that 6 of the 7 countries being reviewed funded participation of national experts in the review process (the stage 3 review or the adjustments review). Luxembourg did not provide an expert, but supported the adjustment review by providing a voluntary contribution (financial support was given directly to CEIP — see item 1.7.1 in the 2014–2015 workplan). This support reduced the amount of core budget that CEIP needed to assign to the review process, allowing the EMEP funding to be used for other CEIP activities (e.g., development of the new gridding system).

---