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Review of the 2014 Adjustment Application by Germany

Expert review team report for the EMEP Steering Body

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Executive Summary

1. As mandated by Decision 2012/3 (ECE/EB.AIR/111/Add.1) of the Executive Body of the CLRTAP the nominated Expert Review Team undertook a detailed review of the adjustment application submitted by Germany. The review was undertaken on behalf of the EMEP Steering Body and following the guidance published in the Annex to decision 2012/12 (ECE/EB.AIR/113/Add.1).
2. Each sector of the application was reviewed by two independent sectoral experts during May and June 2014. The findings were discussed at the meeting held from 23-27 June 2014 in Copenhagen at the EEA. The conclusions and recommendations for the EMEP SB are documented in this country report.

Table ES1 Summary Information on the Submitted Application

Reasons for adjustment application (Decision 2012/3, para 6)	Transport, 1A3b: Significantly different EFs Agriculture, 4B,4D: New source
Pollutants for which adjustment is applied for	NOx
Year(s) for which adjustment is applied	Transport: 2010-2012 Agriculture: 2005-2012
Date of notification of adjustment to the Secretariat	7 February 2014
Date of submission of supporting documentation	14 February 2014

3. The Expert Review Team has reviewed and evaluated the documents submitted by Germany.
4. **Road Transport (1.A.3.b), NOx:** Germany provided information that transparently presented “extraordinary” revisions to emission factors for NOx, and also clearly quantified the impact of the revisions to the EFs alone. The Expert Review Team has concluded that the application does meet all of the requirements laid out in Decision 2012/12 of the Executive Body of the CLRTAP, and therefore recommends that the EMEP Steering Body **ACCEPT** this adjustment application
5. **Agriculture, Livestock 4.B and Soils 4.D, NOx:** Germany has reported NOx emissions from the agriculture sector under the framework of the CLRTAP since the year 2002. However, the emissions of NOx from Livestock (4B) and Soils (4D) were not accounted for when emission reduction commitments were set. The Expert Review Team has concluded that the application does meet all of the requirements laid out in Decision 2012/12 of the Executive Body of the CLRTAP, and therefore recommends that the EMEP Steering Body **ACCEPT** this adjustment application.
6. The following table provides a summary of the inventory adjustments that are accepted by the ERT.

Table ES2 Aggregated Sum of Accepted Inventory Adjustments (ktonnes)

Pollutant		2005	2006	2007	2008	2009	2010	2011	2012
NOx	kt	-112.32	-111.74	-104.91	-113.27	-103.37	-204.75	-208.17	-197.69

Table ES2 Impact of the Accepted Inventory Adjustments on National Emissions

Poll.	GP Emission Commitment (kt)	2010 Emission reported in 2014 (kt)	2010 Emission (adjusted) (kt)	Difference (%)	2012 Emission reported in 2014(kt)	2012 Emissions (adjusted) (kt)	Difference (%)
NOx	1081	1328.1	1123.3	-15%	1273.4	1075.7	-16%

7. Germany's national total emissions will be below the Gothenburg Protocol ceilings from 2012 onwards, if the proposed adjustments are accepted.

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1 Introduction and Context

8. Parties may apply to adjust their inventory data or emission reduction commitments if they are (or expect to be) in non-compliance with their emission reduction targets¹. However, in making an adjustment application, they must demonstrate that extraordinary circumstances have given rise to revisions to their emissions estimates. These extraordinary circumstances fall into three broad categories:

9. Emission source categories are identified that were not accounted for at the time when the emission reduction commitments were set; or

10. For a particular source, the emission factors used to estimate emissions for the year in which emissions reduction commitments are to be attained are significantly different to those used when the emission reduction commitments were set; or

11. 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.

12. Any Party submitting an application for an adjustment to its inventory is required to notify the Convention Secretariat through the Executive Secretary by 15 February at the latest. The supporting information detailed in Decision 2012/12 must be provided (either as part of the Informative Inventory Report, or in a separate report) by 15 March of the same year.

13. As mandated by Decision 2012/12 of the Executive Body of the CLRTAP, applications for adjustments that are submitted by Parties are subject to an expert review². Technical coordination and support to the review is provided by EMEP's Centre on Emission Inventories and Projections (CEIP). The members of the review team are selected from the available review experts³ that Parties have nominated to the CEIP roster of experts.

14. The Expert Review Team (ERT) undertakes a detailed technical review of the adjustment application in cooperation with the EMEP technical bodies and makes a recommendation to the EMEP Steering Body on the acceptance or rejection of the application. The EMEP Steering Body then takes its decision on any adjustment application based on the outcome of the technical assessment completed by ERT.

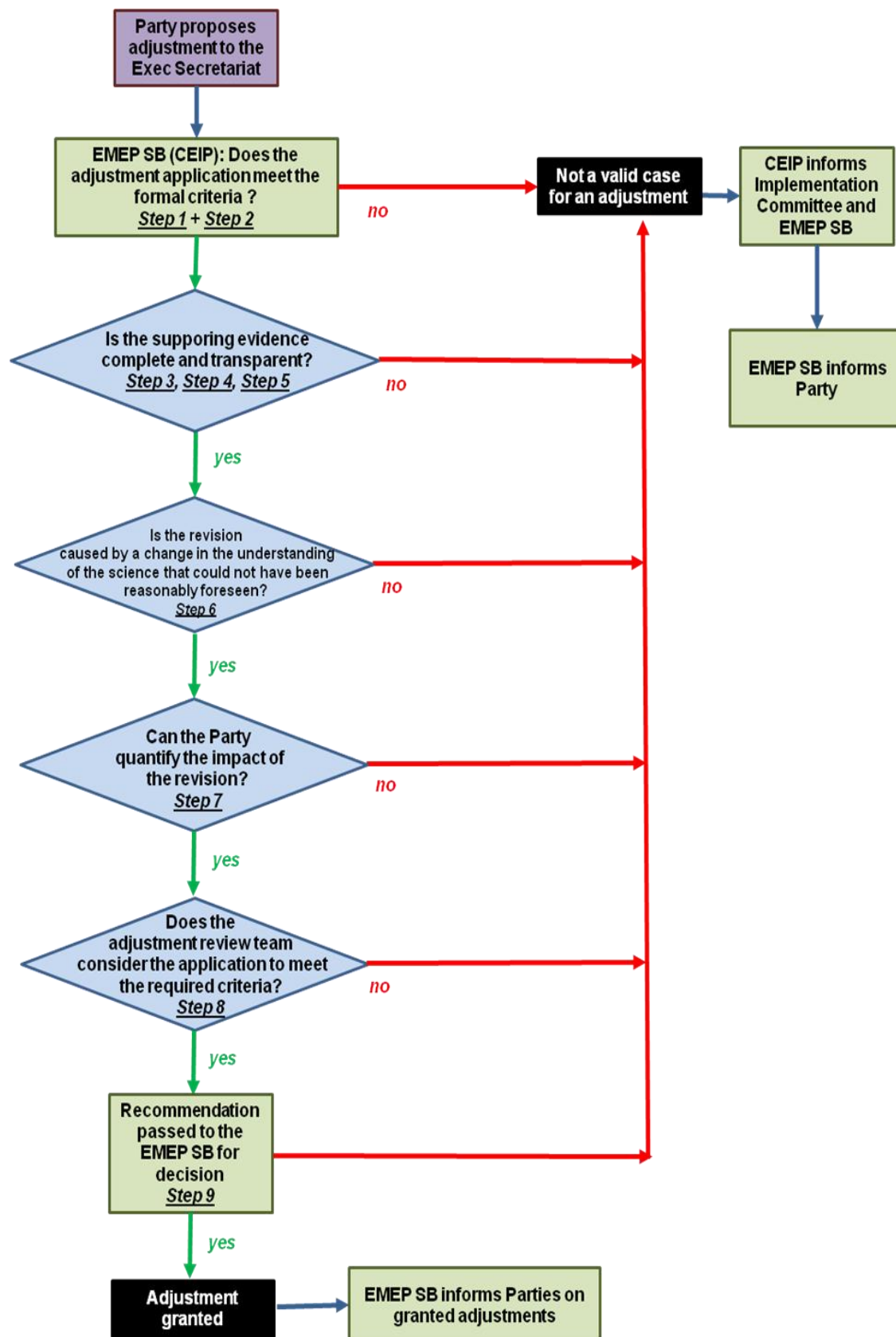
15. The flow diagram below outlines the different stages of the technical review. The following sections of this report are structured in the same way, and describe in detail the findings of the ERT at each of the decision gates in the process.

¹ Throughout this report the term "emission reduction commitments" is used. However, the term "emission ceilings" is equally applicable.

² The EMEP Steering Body, in conjunction with other appropriate technical bodies under EMEP, shall review the supporting documentation and assess whether the adjustment is consistent with the circumstances described in paragraph 6 of decision 2012/3 and the further guidance in decision 2012/12.

³ http://www.ceip.at/fileadmin/inhalte/emep/pdf/2014/0_Roster_2014.pdf

Figure 1: Flow Diagram/Decision Tree for the Review of Adjustment Applications



2 Review of Submitted Adjustments

2.1 Assessment of Formal Criteria

16. Germany notified the Convention Secretariat through the Executive Secretary of its intention to apply for a new adjustment on 14/02/2014 and thus before the legal deadline of 15 February. All supporting information requested by Decision 2012/12 was provided as part of the Informative Inventory Report before the legal deadline of the 15 March of the same year that it is being submitted for review by the EMEP Steering Body (Decision 2012/12, annex, para 1). Additional documentation was provided during the review in response to requests from the ERT. Appendix 1 lists the documentation provided by the Party.

17. Germany submitted an application for a NO_x emissions adjustment of its emission inventory in categories :

- a) Road transport 1A3b (2010-2012)
- b) Agriculture 4B, 4D (2005-2012)

18. Germany does not comply with its emission reduction commitments listed in Annex II of the Gothenburg Protocol (paragraph 1 of Decision 2012/3).

19. Germany provided information on the impact of the adjustment to its emission inventory, and the extent to which it would reduce the current exceedance and possibly bring the Party in compliance with emission reduction commitments.

20. Germany included information on when it will meet its emission ceiling for NO_x in the supporting documentation.

2.2 Road Transport 1.A.3.b (NO_x)

2.2.1 Assessment of Consistency with Requirements of Decision 2012/3

21. The Party made an application based on significant revisions to emission factors (EFs).

22. The adjustment application requires the provision of specific supporting information to demonstrate compliance with specific criteria (Decision 2012/3, para. 6a-c). The ERT reviewed the supporting documentation (see Section 4) with regard to these criteria and concluded that emission factors used to determine emission levels for the road transport source categories 1.A.3.bi-iv 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.

23. The changes in EFs highlighted in the adjustment application could not have been foreseen at the time of setting 2010 emission ceilings, and result entirely from the Euro standards not delivering the originally predicted emissions reductions in the real world.

24. The ERT therefore concludes that the provided supporting evidence does comply with the criteria presented in Decision 2012/3, and that the circumstances on which the adjustment is based could not have been reasonably foreseen by the Party when the emission ceilings were established for 2010.

25. The ERT reviewed the documentation that was provided to support the application (listed in Section 4).

26. The supporting information provided by the Party on the revisions made to emission factors was not fully transparent. The ERT therefore requested that the Party provided clarification on the adjustment methodology as well as adjustment calculations for other years of the application (i.e. 2011 and 2012).

27. The Party provided detailed and extensive information to support their originally submitted information, and the ERT were satisfied that this additional information did fully explain the impact on the NO_x emissions from the different revisions that had been made to the calculation methodology (resulting in the exceedance of the 2010 ceiling).

2.2.2 Assessment of the Quantification of the Impact of the Revision

28. The adjustment application process requires that the Party submit a quantification of the impact of the adjustment for which an application has been submitted. Table 1 provides an overview of the NO_x adjustment applications of Germany in the Road Transport sector.

Table 1: Germany's NO_x Adjustment Application for Road Transport

Reference number	Pollutant	NFR09	unit	2010	2011	2012
GER/2014/1a	NO _x	1A3b	kt	-101.00	-96.00	-91.00

29. The ERT concludes that the quantification of the impact of this adjustment, as calculated by the Party, on national total emissions uses an appropriate methodology and does not include any calculation errors. Furthermore, the ERT concludes that the information presented by the Party is line with the most up-to-date available guidance from the EMEP/EEA Emissions Inventory Guidebook and the scientific literature.

2.3 Agriculture - Livestock 4B, Agricultural Soils 4D (NO_x)

2.3.1 Assessment of Consistency with Requirements of Decision 2012/3

30. The Party made an application based on new emission sources.

31. The adjustment application requires the provision of specific supporting information to demonstrate compliance with specific criteria (Decision 2012/3, para. 6a-c). The ERT reviewed the supporting documentation (see Annex 1) with regard to these criteria and concluded that the new sources added to sectors 4B and 4D were not identified in the guidance (and hence no methodologies were available) when emission reduction commitments were set.

32. The ERT reviewed the documentation that was provided to support the application (listed in Appendix 1). The supporting information provided by the Party on the addition of the new source in 4G was considered to be complete.

33. Germany transparently demonstrated that increased emissions are based on new emission sources, and are not the result of changes in agricultural activities in Germany. Furthermore, the ERT confirmed that source was not included in the RAINS model of IIASA nor in Germany's national inventory.

2.3.2 Assessment of the Quantification of the Impact of the Revision

34. The adjustment application process requires that the Party submit a quantification of the impact of the adjustment for which an application has been submitted. Table 2 provides an overview of the NO_x adjustment applications of Germany in sectors 4B and 4D.

Table 2: Germany's NO_x Adjustment Application for Agricultural Livestock 4B and Soils 4D

Reference number	Pollutant	NFR09	unit	2005	2006	2007	2008	2009	2010	2011	2012
GER/2014/2a	NO _x	4B	kt	-1.98	-1.95	-1.96	-1.97	-1.97	-1.93	-1.89	-1.88
GER/2014/2b	NO _x	4D	kt	-110.33	-109.79	-102.95	-111.30	-101.41	-101.82	-110.29	-104.80
	NO_x	Total AGRO	kt	-112.32	-111.74	-104.91	-113.27	-103.37	-103.75	-112.17	-106.69

35. The ERT concludes that the quantification of the impact of this adjustment, as calculated by the Party, on national total emissions uses an appropriate methodology and does not include any calculation errors. Furthermore, the ERT concludes that the information presented by the Party is in line with the most up-to-date available guidance from the EMEP/EEA Emissions Inventory Guidebook and the scientific literature.

3 Conclusions and Recommendations

36. The ERT has undertaken a full and thorough assessment of the application for an adjustment of NO_x emissions inventory that was submitted by Germany for the following source sectors:

- a. Road transport (1A3bi-iv);
- b. Agriculture Livestock (4B) and Soils (4D).

37. The review of the submitted application followed the guidance provided in the Annex to Decision 2012/12 of the Executive Body of the CLRTAP. The findings of the ERT are described in detail in Section 2 of this report.

38. Table 3 below provides a summary of the adjustment applications received from Germany, and the subsequent recommendations made by the ERT to the EMEP SB.

Table 3: Recommendations from the ERT to the EMEP SB

Country	Sector	NFRs	Pollutant	Years	ERT Recommendation
Germany	Road Transport	1A3b	NO _x	2010 - 2012	Accept
	Agriculture	4B and 4D	NO _x	2005 - 2012	Accept

39. The ERT has concluded that the application does meet all of the requirements laid out in Decision 2012/12 of the Executive Body of the CLRTAP, and therefore recommends that the EMEP Steering Body accept the submitted adjustment applications.

40. **Road Transport (1.A.3.b), NO_x:** Germany provided information that transparently presented “extraordinary” revisions to emission factors for NO_x, and also clearly quantified the impact of the revisions to the EFs alone. The ERT has concluded that the application does meet all of the requirements laid out in Decision 2012/12 of the Executive Body of the CLRTAP, and therefore recommends that the EMEP Steering Body **ACCEPT** this adjustment application.

41. **Agriculture, Livestock 4.B and Soils 4.D, NO_x:** Germany has reported NO_x emissions from the agriculture sector under the framework of the CLRTAP since the year 2002. However, the emissions of NO_x from Livestock (4B) and Soils (4D) were not accounted for when emission reduction commitments were set. The ERT has concluded that the application does meet all of the requirements laid out in Decision 2012/12 of the Executive Body of the CLRTAP, and therefore recommends that the EMEP Steering Body **ACCEPT** this adjustment application.

42. Table 4 below provides a summary of the adjustments recommended for acceptance.

Table 4 Adjustment Applications Recommended by ERT for Acceptance

Reference no.	Pollutant	NFR09	unit	2005	2006	2007	2008	2009	2010	2011	2012
GER/2014/1a	NO _x	Transport 1A3b	kt						-101.00	-96.00	-91.00
GER/2014/2a	NO _x	Agricul 4B	kt	-1.98	-1.95	-1.96	-1.97	-1.97	-1.93	-1.89	-1.88
GER/2014/2b	NO _x	Agricul 4D	kt	-110.33	-109.79	-102.95	-111.30	-101.41	-101.82	-110.29	-104.80
	NO_x	TOTAL	kt	-112.32	-111.74	-104.91	-113.27	-103.37	-204.75	-208.17	-197.69

43. Germany’s national total emissions will be below the Gothenburg Protocol ceilings from 2012 onwards, if the proposed adjustments are accepted.

44. The impact of these adjustments on the national emission totals is summarised in Table 5 below.

Table 5: Impact of the Inventory Adjustments on National Emissions

Poll.	GP Emission Commitment (kt)	2010 Emission reported in 2014 (kt)	2010 Emission (adjusted) (kt)	Difference (%)	2012 Emission reported in 2014 (kt)	2012 Emissions (adjusted) (kt)	Difference (%)
NO _x	1081	1328.1	1123.3	-15%	1273.4	1075.7	-16%

4 Information Provided by the Party

45. Table 6 lists the information provided by the Party in its adjustment application. The information provided by Party can be downloaded from CEIP website⁴.

Table 6: Information provided by the Party (as part of the application process)

Filename	Short description of content
Table 7, Excel file	
German IIR (wiki)	http://iir-de.wikidot.com/adjustment-de-a

⁴ http://www.ceip.at/ms/ceip_home1/ceip_home/adjustments_gp/

5 References

Decision 2012/3 (ECE/EB.AIR/111/Add.1): Adjustments under the Gothenburg Protocol to emission reduction commitments or to inventories for the purposes of comparing total national emissions with them

Decision 2012/12 (ECE/EB.AIR/113/Add.1): 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

Data submitted by Parties applying for an adjustment:

http://www.ceip.at/ms/ceip_home1/ceip_home/adjustments_gp/

EMEP/EEA Air Pollutant Emission Inventory Guidebook 2013

<http://www.eea.europa.eu/publications/emep-eea-guidebook-2013>

2009 Reporting Guidelines (ECE/EB.AIR/97) for Estimating and Reporting Emission Data under CLRTAP

The 1999 Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone

http://www.unece.org/env/lrtap/multi_h1.html