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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

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Item 5 (a) (i) of the provisional agenda

Progress in activities of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe in 2024 and future work: improvement and reporting of emission data and adjustments under the Protocol to Abate Acidification, Eutrophication and Ground-level Ozone: 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 2024–2025 workplan for the implementation of the Convention on Long-range Transboundary Air Pollution (ECE/EB.AIR/154/Add.1).

The report provides a summary of the 2024 review of applications for adjustments to emission inventories submitted by Czechia, Denmark, the Netherlands, France and the United Kingdom in accordance with Executive Body decisions 2012/3, 2012/4 and 2012/12, as amended by decision 2014/1.^a

The review is based on documents submitted by Parties and findings of the Expert Review Team.

^a Available at www.unece.org/env/lrtap/executivebody/eb_decision.html.

I. Introduction

1. At its thirtieth session (Geneva, 30 April–4 May 2012), aware of the uncertainties inherent in estimating and projecting emission levels and of the need for continuous scientific and methodological improvements, and determined that the emergence of new methodologies should not place a Party at a disadvantage in terms of its emission reduction commitments, the Executive Body for the Convention on Long-range Transboundary Air Pollution adopted decisions 2012/3 and 2012/4¹ in order to allow Parties to make adjustments to emission reduction commitments, or to inventories for the purposes of comparing total national emissions with them, pursuant to the Protocol to Abate Acidification, Eutrophication and Ground-level Ozone (Gothenburg Protocol) to the Convention on Long-range Transboundary Air Pollution.

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 annex to that decision, sets out the general principles that Parties should follow in submitting applications for adjustments.

3. However, following the first review of adjustment applications by countries in 2014, it became evident that more detailed technical guidance was needed. At its thirty-third session (Geneva, 8–11 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 28 April 2015.

4. The amended Protocol to Abate Acidification, Eutrophication and Ground-level Ozone (Gothenburg Protocol) entered into force on 7 October 2019. Tables 2–6 of annex II to the amended Protocol set out the emission reduction commitments for SO₂, NO_x, NH₃, NMVOCs and PM_{2.5} for 2020 and beyond, expressed as percentage reductions from the 2005 emission level. The Task Force on Emission Inventories and Projections prepared up-dated technical guidance for inventory adjustments in the context of emission reduction commitments. At its Forty-second session in Geneva, 12–16 December 2022 the Executive Body for the Convention on Long-range Transboundary Air Pollution welcomed and took note of the updated Technical Guidance for Emissions Inventory Adjustments under the Amended Gothenburg Protocol, approved by the EMEP Steering Body².

5. Pursuant to the Executive Body's decisions, as clarified by the Technical Guidance, Parties may apply to adjust their inventory data or emission reduction commitments under 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;³

(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 from 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.⁴

6. A 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 (ECE) by 15 February at the latest if the application is to be reviewed during the same year. All supporting information requested in Executive Body decision

¹ All Executive Body decisions referred to in the present document are available at www.unece.org/env/lrtap/executivebody/eb_decision.html.

² [Technical Guidance adjustments \(ERC\) \(ceip.at\)](http://www.unece.org/env/lrtap/technicalguidance/erc/ceip.at)

³ For a more detailed definition, see Executive Body decision 2014/1, annex, para. 3.

⁴ ECE/EB.AIR/130, para. 5

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 review by the Steering Body to the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP).

7. The present report summarizes the review of the previously approved inventory adjustment applications submitted by Denmark, the Netherlands, France and the United Kingdom in 2024 and the new adjustment applications submitted by Czechia and Denmark in accordance with Executive Body decisions 2012/3, 2012/4, 2012/12 and 2014/1 and in the light of the Technical Guidance.

8. The report is based on the documents submitted by Parties and those prepared by the Expert Review Team (ERT) during the review process in 2024. It was prepared by the EMEP Centre on Emission Inventories and Projections in line with its revised mandate (Executive Body decision 2019/14).

II. Organization of the review

9. As mandated by Executive Body decision 2012/12, applications for adjustments submitted by Parties are subject to expert review. Technical coordination of and support for the 2024 review was provided by the Centre on Emission Inventories and Projections, represented by Ms. Sabine Schindlbacher. The members of the review team were selected from the experts appointed to the Centre on Emission Inventories and Projections roster of experts by the Parties.

10. The adjustment review was performed in parallel with the stage 3 review. The adjustment expert review team was composed of one lead reviewer: Mr. Ben Richmond (United Kingdom) and two sector experts Mrs. Susana Lopez-Aparicio (Norway) and Mrs. Anđelka Radosavljević (Serbia). The team assessed:

- (a) previously approved adjustment applications submitted in 2024;
- (b) new adjustment applications submitted in 2024.

11. Each sector was reviewed by two independent sectoral experts during May and June 2024 (desk review). The findings were discussed within the review team. The conclusions and recommendations from the review for submission to the EMEP Steering Body were elaborated by the review team and are summarized in section III.

12. The Centre on Emission Inventories and Projections has updated a dedicated web page⁵ for the review process, which provides an introduction, links to documentation and other information on the adjustments submitted by Parties in 2024 and those approved prior to 2024, as well as the tool used by the reviewers in assessing adjustment applications.

III. Assessment of adjustments approved prior to 2024

13. The reviewers assessed the adjustments reported by Denmark, France, the Netherlands and the United Kingdom of Great Britain and Northern Ireland that had been approved prior to 2024. Details on these adjustments may be downloaded from the Centre on Emission Inventories and Projections website.⁶

⁵ See www.ceip.at/gothenburg-protocol/review-of-adjustments

⁶ See www.ceip.at/gothenburg-protocol/review-of-adjustments

A. Denmark – manure management - dairy cattle (3.B.1.a)

14. The reviewers conducted an assessment of the adjustment of NMVOC emissions from NFR 3B1a: Manure management - Dairy cattle for Denmark, originally approved in 2022. The adjustment has been recalculated in 2024 and the corresponding values present small changes compared to the latest approved version (2023). Specifically, a 0.1% increase for 2021. Denmark explained that the reason for recalculations is a review and update to the number of days cattle spend on grass. The emissions were estimated using the methodology previously approved by ERT.

15. The impact of the adjustment on the NMVOC emission inventories of Denmark for the years 2020-2022 in ktonnes is detailed in Table 1.

Table1:

Impact of adjustments on the NMVOC emission inventory of Denmark for the year 2005, 2020, 2021 and 2022.

(Thousands of tons)

	Unit	2005	2020	2021	2022
ERC	% of 2005		35%	35%	35%
ERC unadjusted	(kt)		104.62	104.62	104.62
NT for Compliance unadjusted	(kt)	160.96	109.13	108.95	118.45
Gap to ERC unadjusted	(%)		-4%	-4%	-13%
ERC adjusted	(kt)		91.61	91.61	91.61
Adjusted NT for Compliance	(kt)	140.94	85.23	84.53	94.43
Gap to ERC adjusted	(%)		7%	8%	-3%
Impact of adjustment on NT for Compliance	(kt)	-20.02	-23.90	-24.42	-24.02

Notes: ERC: emission reduction commitment, NT: National total

16. The reviewers concluded that there had been no change in the methodology that would alter the original approval of the adjustment application and that the application met all of the requirements set out in Executive Body decision 2012/12 and in the Technical Guidance; hence, it is **recommended that the adjustment continue to be accepted**.

B. France – Manure management (3.B) and Crop production and agricultural soils (3.D)

17. The reviewers conducted an assessment of the adjustment of NMVOC emissions from NFR 3B: Manure Management and NFR 3D: Agricultural Soils for France, originally approved in 2022. The adjustment has been recalculated in 2024 and the corresponding values present small changes compared to the latest approved version (2023). Specifically, a 1% increase for 3B and below 1% increase for 3D in 2005 emissions compared with values submitted in 2023. For 2021, the difference between emissions submitted in 2023 and 2024 are below 0.2%. France explained that they have updated the fraction of silage due to improved knowledge. This update has entailed a revision of NMVOC emissions compared to 2023 submission. Moreover, France explained that minor revisions since the 2023 submission have occurred due to the availability of updated activity data and new information on anaerobic digestion, which impact the NMVOC calculations. The emissions were estimated using the methodology previously approved by ERT.

18. The impact of the adjustments on the NMVOC emission inventories of France for the years 2020-2022 in ktonnes is detailed in Table 2.

Table2:

Impact of adjustments on the NMVOC emission inventory of France for the year 2005, 2020, 2021 and 2022.

(Thousands of tons)

	Unit	2005	2020	2021	2022
ERC	% of 2005		43%	43%	43%
ERC unadjusted	(kt)		1022.30	1022.30	1022.30
NT for Compliance unadjusted	(kt)	1793.51	1080.23	1076.75	1065.45
Gap to ERC unadjusted	(%)		-5.67%	-5.33%	-4.22%
ERC adjusted	(kt)		786.98	786.98	786.98
Adjusted NT for Compliance	(kt)	1380.66	664.18	682.51	648.04
Gap to ERC adjusted	(%)		15.60%	13.27%	17.65%
Impact of adjustment on NT for Compliance	(kt)	-412.85	-416.05	-394.24	-417.41

Notes: ERC: emission reduction commitment, NT: National total

19. The reviewers concluded that there had been no change in the methodology that would alter the original approval of the adjustment application and that the application met all of the requirements set out in Executive Body decision 2012/12 and in the Technical Guidance; hence, it is **recommended that the adjustment continue to be accepted.**

C. The Netherlands – manure management - dairy cattle (3.B.1.a)

20. The reviewers conducted an assessment of the adjustment of NMVOC emissions from NFR 3B1a: Manure management - Dairy cattle for the Netherlands, originally approved in 2022. The adjustment has been recalculated in 2024 and the corresponding values present small changes (<0.05%) compared to the latest approved version (2023). Netherlands explained that emissions slightly differ due to the inclusion of bedding material in the emission calculations in the 2024 submission. The emissions were estimated using the methodology previously approved by ERT.

21. The impact of the adjustment on the NMVOC emission inventories of the Netherlands for the years 2005 and 2020 in ktonnes is detailed in Table 3.

Table3:

Impact of adjustments on the NMVOC emission inventory of the Netherlands for the year 2005 and 2020.

(Thousands of tons)

	Unit	2005	2020
ERC	% of 2005		8%
ERC unadjusted	(kt)		248.34
NT for Compliance unadjusted	(kt)	269.93	249.89
Gap to ERC unadjusted	(%)		-1%
ERC adjusted	(kt)		226.03
Adjusted NT for Compliance	(kt)	245.68	206.27
Gap to ERC adjusted	(%)		9%
Impact of adjustment on NT for Compliance	(kt)	-24.25	-43.62

Notes: ERC: emission reduction commitment, NT: National total

22. The reviewers concluded that there had been no change in the methodology that would alter the original approval of the adjustment application and that the application met all of the requirements set out in Executive Body decision 2012/12 and in the Technical Guidance; hence, it is **recommended that the adjustment continue to be accepted.**

D. The United Kingdom – Other organic fertilisers applied to soils (3.D.a.2.c)

23. The reviewers conducted an assessment of the adjustment of NH₃ emissions from NFR 3Da2c: Other organic fertilisers applied to soils (including compost) for United Kingdom, originally approved in 2022. The adjustment has been recalculated in 2024 and the corresponding values present small changes (below 0.3 kt) compared to the latest approved version (2023). United Kingdom explained that recalculations have been carried out due to minor revisions to the underlying data used to calculate 3Da2c emissions. The emissions were estimated using the methodology previously approved by ERT.

Table 4: Impact of adjustments on the NH₃ emission inventories of United Kingdom for the years 2020-2022 in ktonnes

	Unit	2005	2020	2021	2022
ERC	% of 2005		8%	8%	8%
ERC unadjusted	(kt)		258.5	258.5	258.5
NT for Compliance unadjusted	(kt)	280.9	260.7	266.5	259.3
Gap to ERC unadjusted	(%)		-0.9%	-3.1%	-0.3%
ERC adjusted	(kt)		258.0	258.0	258.0
Adjusted NT for Compliance	(kt)	280.5	248.2	253.6	246.1
Gap to ERC adjusted	(%)		3.8%	1.7%	4.6%
Impact of adjustment on NT for Compliance	(kt)	-0.5	-12.5	-12.9	-13.2

Notes: ERC: emission reduction commitment, NT: National total

24. The reviewers concluded that there had been no change in the methodology that would alter the original approval of the adjustment application and that the application met all of the requirements set out in Executive Body decision 2012/12 and in the Technical Guidance; hence, it is recommended that the adjustment **continue to be accepted**.

IV. Assessment of new adjustments applications

25. The reviewers assessed the new adjustments reported by Czechia and Denmark that had not been approved prior to 2024. Details on these new adjustments may be downloaded from the Centre on Emission Inventories and Projections website.⁷

A. Czechia – Agriculture Other – Inorganic N-fertilizers (3.D.a.1)

26. The adjustment application process requires that the Party submit a quantification of the impact of the adjustment for which an application has been submitted.

27. The ERT reviewed the quantification of the emissions adjustments provided by the country. The ERT concluded that the information provided was consistent with the most up-to-date available EMEP/EEA Emissions Inventory Guidebook, and that it showed that Czechia would meet their Emission Reduction Commitment with the adjustment in place. However, the ERT also notes that the information provided by Czechia across the Annex I submission template, Annex IIa adjustment template, and Czechia's calculation spreadsheet are inconsistent with each other. As such, the ERT strongly recommends that Czechia ensure all reported emissions data concerning adjustments, and the underlying working spreadsheets are consistent with one another. In a statement Czechia welcomed the conclusions of the ERT, which acknowledged the validity of the requirement to adjust the emission values and accepted the recommendations for subsequent improvement of the information provided in the IIR and explained the reasons for the inconsistency. However, further communication on

⁷ See www.ceip.at/gothenburg-protocol/review-of-adjustments

technical details between Czechia and the ERT was ongoing at the time this summary was written and the adjustment application was not fully finalized. The impact of the adjustment on the NH₃ emission inventories of Czechia for the years 2020-2022 in ktonnes is detailed in Table 5.

Table5:

Impact of the new adjustments on the NH₃ emission inventory of Czechia for the year 2005, 2020, 2021 and 2022.

(Thousands of tons)

	Unit	2005	2020	2021	2022
ERC	% of 2005		7%	7%	7%
ERC unadjusted	(kt)		77.20	77.20	77.20
NT for Compliance unadjusted	(kt)	83.01	80.02	79.65	77.95
Gap to ERC unadjusted	(%)		-4%	-3%	-1%
ERC adjusted	(kt)		73.90	73.90	73.90
Adjusted NT for Compliance	(kt)	79.46	72.56	71.72	72.91
Gap to ERC adjusted	(%)		2%	3%	1%
Impact of adjustment on NT for Compliance	(kt)	-3.55	-7.46	-7.93	-5.04

Notes: ERC: emission reduction commitment, NT: National total

28. The ERT recommends the EMEP SB **to accept** the new adjustment application submitted by Czechia.

B. Denmark – manure management – Non-dairy cattle (3.B.1.b)

29. The adjustment application process requires that the Party submit a quantification of the impact of the adjustment for which an application has been submitted.

The ERT reviewed the quantification of the emissions adjustments provided by the Denmark. The ERT concluded that the information provided was accurate and error free, and is consistent with the most up-to-date available EMEP/EEA Emissions Inventory Guidebook.

30. The impact of the new adjustment on the NMVOC emission inventories of Denmark for the years 2020-2022 in ktonnes is detailed in Table 6.

Table 6:
Impact of the new adjustments on the NMVOC emission inventory of Denmark for the year 2005, 2020, 2021 and 2022.

(Thousands of tons)

	Unit	2005	2020	2021	2022
ERC	% of 2005		35%	35%	35%
ERC unadjusted	(kt)		91.61	91.61	91.61
NT for Compliance unadjusted	(kt)	140.94	85.23	84.53	94.43
Gap to ERC unadjusted	(%)		7%	8%	-3%
ERC adjusted	(kt)		84.90	84.90	84.90
Adjusted NT for Compliance	(kt)	130.62	74.02	73.40	84.10
Gap to ERC adjusted	(%)		13%	14%	1%
Impact of adjustment on NT for Compliance	(kt)	-10.32	-11.21	-11.13	-10.33

Notes: ERC: emission reduction commitment, NT: National total

31. The ERT recommends the EMEP SB to **accept** new adjustment applications submitted by Denmark.

V. Conclusions and recommendations

A. Adjustment cases approved prior to 2024

32. The ERT assessed the adjustments reported by Denmark, France, the Netherlands and the United Kingdom of Great Britain and Northern Ireland that had been approved prior to 2024 and concluded that the adjustments met all of the requirements set out in Executive Body decision 2012/12 and in the Technical Guidance. **It is therefore recommended that the EMEP Steering Body accept all of the adjustments reported by Denmark, France, the Netherlands and the United Kingdom as listed in Table 7 below.**

Table 7:
Expert Review Team recommendations on previously approved Adjustment applications received in 2024

Country	Sector	NFR	Pollutant	Years	Expert Review Team recommendation
Denmark	Agriculture	3.B.1.a	NMVOC	2005; 2020, 2022	Accept
France	Agriculture	3.B, 3.D	NMVOC	2005; 2020, 2022	Accept
The Netherlands	Agriculture	3.B.1.a	NMVOC	2005; 2020	Accept
The United Kingdom	Agriculture	3.D.a.2.c	NH ₃	2005; 2020, 2022	Accept

B. New Adjustment cases approved prior to 2024

33. The ERT assessed the new adjustments reported by Czechia and Denmark and concluded that the adjustments met all of the requirements set out in Executive Body decision 2012/12 and in the Technical Guidance. **It is therefore recommended that the EMEP Steering Body accept all of the new adjustments reported by Czechia and Denmark as listed in Table 8 below.**

Table 8:
Expert Review Team recommendations on new adjustment applications received in 2024

<i>Country</i>	<i>Sector</i>	<i>NFR</i>	<i>Pollutant</i>	<i>Years</i>	<i>Expert Review Team recommendation</i>
Czechia	Agriculture	3.D.a.1	NH ₃	2005; 2020, 2022	Accept
Denmark	Agriculture	3.B.1.b	NMVOG	2005; 2020, 2022	Accept