



COMPLIANCE COMMITTEE

CC/ERT/ARR/2021/7
8 April 2021

Report of the individual review of the annual submission of Austria submitted in 2020

Note by the secretariat

The report of the individual review of the annual submission of Austria submitted in 2020 was published on 1 April 2021. For purposes of rule 10, paragraph 2, of the rules of procedure of the Compliance Committee (annex to decision 4/CMP.2, as amended by decisions 4/CMP.4 and 8/CMP.9), the report is considered received by the secretariat on the same date. This report, FCCC/ARR/2020/AUT, contained in the annex to this note, is being forwarded to the Compliance Committee in accordance with section VI, paragraph 3, of the annex to decision 27/CMP.1.



United Nations

FCCC/ARR/2020/AUT



Framework Convention on
Climate Change

Distr.: General
1 April 2021

English only

Report on the individual review of the annual submission of Austria submitted in 2020*

Note by the expert review team

Summary

Each Party included in Annex I to the Convention must submit an annual inventory of emissions and removals of greenhouse gases for all years from the base year (or period) to two years before the inventory due date (decision 24/CP.19). Parties included in Annex I to the Convention that are Parties to the Kyoto Protocol are also required to report supplementary information under Article 7, paragraph 1, of the Kyoto Protocol with the inventory submission due under the Convention. This report presents the results of the individual review of the 2020 annual submission of Austria, conducted by an expert review team in accordance with the “Guidelines for review under Article 8 of the Kyoto Protocol”. The review took place from 21 to 26 September 2020 remotely.

* In the symbol for this document, 2020 refers to the year in which the inventory was submitted, not to the year of publication.



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Abbreviations and acronyms

AAU	assigned amount unit
AD	activity data
Annex A source	source category included in Annex A to the Kyoto Protocol
AR	afforestation and reforestation
Article 8 review guidelines	“Guidelines for review under Article 8 of the Kyoto Protocol”
CER	certified emission reduction
CH ₄	methane
CM	cropland management
Convention reporting adherence	adherence to the “Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual greenhouse gas inventories”
CO ₂	carbon dioxide
CO ₂ eq	carbon dioxide equivalent
CP	commitment period
CPR	commitment period reserve
CRF	common reporting format
EEA	European Environment Agency
EF	emission factor
EMEP	Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe
ERT	expert review team
ERU	emission reduction unit
FM	forest management
FMRL	forest management reference level
GHG	greenhouse gas
GM	grazing land management
HFC	hydrofluorocarbon
HWP	harvested wood products
IE	included elsewhere
IEA	International Energy Agency
IEF	implied emission factor
IFR	instrument flight rules
IPCC	Intergovernmental Panel on Climate Change
IPPU	industrial processes and product use
KP-LULUCF	activities under Article 3, paragraphs 3–4, of the Kyoto Protocol
LTO	landing and take-off
LULUCF	land use, land-use change and forestry
N	nitrogen
NA	not applicable
NE	not estimated
NFI	national forest inventory
NF ₃	nitrogen trifluoride
NH ₃	ammonia
NIR	national inventory report
NO	not occurring
N ₂ O	nitrous oxide
PFC	perfluorocarbon

QA/QC	quality assurance/quality control
RMU	removal unit
RV	revegetation
SEF	standard electronic format
SF ₆	sulfur hexafluoride
UNFCCC Annex I inventory reporting guidelines	“Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual greenhouse gas inventories”
UNFCCC review guidelines	“Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention”
WDR	wetland drainage and rewetting
Wetlands Supplement	<i>2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands</i>
2006 IPCC Guidelines	<i>2006 IPCC Guidelines for National Greenhouse Gas Inventories</i>

I. Introduction

1. This report covers the review of the 2020 annual submission of Austria, organized by the secretariat in accordance with the Article 8 review guidelines (adopted by decision 22/CMP.1 and revised by decision 4/CMP.11). In accordance with the Article 8 review guidelines, this review process also encompasses the review under the Convention as described in the UNFCCC review guidelines, particularly in part III thereof, namely the “UNFCCC guidelines for the technical review of greenhouse gas inventories from Parties included in Annex I to the Convention” (annex to decision 13/CP.20). The review took place from 21 to 26 September 2020 remotely¹ and was coordinated by Roman Payo, Ruta Bubniene and Peter Iversen (secretariat). Table 1 provides information on the composition of the ERT that conducted the review for Austria.

Table 1

Composition of the expert review team that conducted the review for Austria

<i>Area of expertise</i>	<i>Name</i>	<i>Party</i>
Generalist	Ioannis Sempos	Greece
Energy	Constantin Harjeu	Romania
	Lawrence Kotoe	Ghana
	Haakon Marold	Australia
IPPU	Niculina Mihaela Balanescu	Romania
	Jolanta Merkeliene	Lithuania
Agriculture	Marci Baranski	United States
	Fatou Gaye	Gambia
LULUCF and KP-LULUCF	Koki Okawa	Japan
	Igor Onopchuk	Ukraine
Waste	Medeia Inashvili	Georgia
	Tatiana Tugui	Republic of Moldova
Lead reviewers	Ioannis Sempos	
	Tatiana Tugui	

2. The basis of the findings in this report is the assessment by the ERT of the Party’s 2020 annual submission in accordance with the UNFCCC review guidelines and the Article 8 review guidelines.

3. The ERT has made recommendations that Austria resolve identified findings, including issues² designated as problems.³ Other findings, and, if applicable, the encouragements of the ERT to Austria to resolve related issues, are also included.

4. A draft version of this report was communicated to the Government of Austria, which provided comments that were considered and incorporated, as appropriate, into this final version of the report.

5. Annex I presents the annual GHG emissions of Austria, including totals excluding and including LULUCF, indirect CO₂ emissions, and emissions by gas and by sector, and contains background data on emissions and removals from KP-LULUCF, if elected by the Party, by gas, sector and activity.

¹ Owing to the circumstances related to the coronavirus disease 2019, the review had to be conducted remotely.

² Issues are defined in decision 13/CP.20, annex, para. 81.

³ Problems are defined in decision 22/CMP.1, annex, paras. 68–69, as revised by decision 4/CMP.11.

6. Information to be included in the compilation and accounting database can be found in annex II.

II. Summary and general assessment of the Party's 2020 annual submission

7. Table 2 provides the assessment by the ERT of the Party's 2020 annual submission with respect to the tasks undertaken during the review. Further information on the issues identified, as well as additional findings, may be found in tables 3 and 5.

Table 2

Summary of review results and general assessment of the 2020 annual submission of Austria

Assessment		Issue/problem ID#(s) in table 3 or 5 ^a	
Date of submission	Original submission: NIR, 15 April 2020; CRF tables (version 2), 15 April 2020; SEF tables (SEF-CP1-2019 and SEF-CP2-2019), 15 April 2020		
Review format	Centralized review conducted remotely		
Application of the requirements of the UNFCCC	Have any issues been identified in the following areas:		
Annex I inventory reporting guidelines and the Wetlands Supplement (if applicable)	(a) Identification of key categories?	No	
	(b) Selection and use of methodologies and assumptions?	Yes	E.7, I.9
	(c) Development and selection of EFs?	Yes	W.6
	(d) Collection and selection of AD?	No	
	(e) Reporting of recalculations?	No	
	(f) Reporting of a consistent time series?	Yes	E.5
	(g) Reporting of uncertainties, including methodologies?	Yes	G.3
	(h) QA/QC?	QA/QC procedures were assessed in the context of the national system (see supplementary information under the Kyoto Protocol below)	
	(i) Missing categories, or completeness? ^b	Yes	L.2, L.3
	(j) Application of corrections to the inventory?	No	
Significance threshold	For categories reported as insignificant, has the Party provided sufficient information showing that the likely level of emissions meets the criteria in paragraph 37(b) of the UNFCCC Annex I inventory reporting guidelines?	NA	The Party did not report any insignificant categories as "NE"
Description of trends	Did the ERT conclude that the description in the NIR of the trends for the different gases and sectors is reasonable?	Yes	
Supplementary information under the Kyoto Protocol	Have any issues been identified related to the following aspects of the national system:		
	(a) Overall organization of the national system, including the effectiveness and reliability of the institutional, procedural and legal arrangements?		
	(b) Performance of the national system functions?	No	
	Have any issues been identified related to the national registry:		
	(a) Overall functioning of the national registry?	No	

Assessment	Issue/problem ID#(s) in table 3 or 5 ^a	
	(b) Performance of the functions of the national registry and the adherence to technical standards for data exchange?	No
	Have any issues been identified related to the reporting of information on AAUs, CERs, ERUs and RMUs and on discrepancies in accordance with decision 15/CMP.1, annex, chapter I.E, in conjunction with decision 3/CMP.11, taking into consideration any findings or recommendations contained in the standard independent assessment report?	No
	Have any issues been identified in matters related to Article 3, paragraph 14, of the Kyoto Protocol, specifically problems related to the transparency, completeness or timeliness of the reporting on the Party's activities related to the priority actions listed in decision 15/CMP.1, annex, paragraph 24, in conjunction with decision 3/CMP.11, including any changes since the previous annual submission?	No
	Have any issues been identified related to the following reporting requirements for KP-LULUCF:	
	(a) Reporting requirements of decision 2/CMP.8, annex II, paragraphs 1–5?	No
	(b) Demonstration of methodological consistency between the reference level and reporting on FM in accordance with decision 2/CMP.7, annex, paragraph 14?	No
	(c) Reporting requirements of decision 6/CMP.9?	No
	(d) Country-specific information to support provisions for natural disturbances in accordance with decision 2/CMP.7, annex, paragraphs 33–34?	No
CPR	Was the CPR reported in accordance with decision 18/CP.7, annex; decision 11/CMP.1, annex; and decision 1/CMP.8, paragraph 18?	Yes
Adjustments	Has the ERT applied any adjustments under Article 5, paragraph 2, of the Kyoto Protocol?	No
	Has the Party submitted a revised estimate to replace a previously applied adjustment?	NA
Response from the Party during the review	Has the Party provided the ERT with responses to the questions raised, including the data and information necessary for assessing conformity with the UNFCCC Annex I inventory reporting guidelines and any further guidance adopted by the Conference of the Parties?	Austria does not have a previously applied adjustment
Recommendation for an exceptional in-country review	On the basis of the issues identified, does the ERT recommend that the next review be conducted as an in-country review?	No
Questions of implementation	Did the ERT list any questions of implementation?	No

^a Further information on the issues identified, as well as additional findings, may be found in tables 3 and 5.

^b Missing categories for which methods are provided in the 2006 IPCC Guidelines may affect completeness and are listed in annex III.

III. Status of implementation of recommendations included in the previous review report

8. Table 3 compiles the recommendations from previous review reports that were included in the most recent previous review report, published on 16 January 2019,⁴ and had not been resolved by the time of publication of the review report of the Party's 2018 annual submission. The ERT has specified whether it believes the Party had resolved, was addressing or had not resolved each issue or problem by the time of publication of this review report and has provided the rationale for its determination, which takes into consideration the publication date of the most recent previous review report and national circumstances. The ERT noted that the individual review of Austria's 2019 annual submission did not take place in 2019 owing to insufficient funding for the review process.

Table 3

Status of implementation of recommendations included in the previous review report for Austria

ID#	Issue/problem classification ^{a, b}	Recommendation made in previous review report	ERT assessment and rationale
General			
G.1	QA/QC and verification (G.4, 2018) (G.6, 2016) (G.6, 2015) Convention reporting adherence	Enhance the QC practices, or the application of the existing practices, in order to ensure consistency between the NIR and the CRF tables.	Addressing. Austria addressed two of the four inconsistencies noted in the previous review report by explaining in the NIR that the key category analysis reported in the NIR was carried out using both approach 1 and 2 and conducted at a more detailed level than the automatically generated key category analysis reported in the CRF tables; and that the emissions for category 2.B chemical industry reported in the NIR (p.207) decreased by 58.6 per cent between 1990 and 2018, and the same value was reported in CRF table 10s1. However, two inconsistencies have not yet been addressed: the Party still reported emissions for category 2.F for 1992 as "NO" in NIR table 122, although an estimate (0.02 kt CO ₂ eq) was reported in CRF table 10s1; and it reported in the NIR (p.204) that PFC emissions decreased from 1,183 kt CO ₂ eq in 1990 to 44 kt CO ₂ eq in 1993, whereas in CRF table 10s5 it reported the same value for 1990 but 63.52 kt CO ₂ eq for 1993.
G.2	Article 3, paragraph 14, of the Kyoto Protocol (G.5, 2018) Transparency	Improve the transparency of the information in the NIR by including specific information on the key activities with regard to the assistance to developing countries on renewable energy sources as part of reporting under decision 15/CMP.1, annex, paragraph 24(d), in conjunction with decision 3/CMP.11 and an update of the involvement in IEA joint implementation agreements, in the context of reporting under decision 15/CMP.1, annex, paragraph 24(f).	Resolved. The Party improved the transparency of the information in its NIR by providing in the NIR (pp.577–579) more details on its assistance of developing countries with regard to renewable energy sources. For example, at the bilateral level Austria supports, through the Austrian renewables institution, AEE – Institute for Sustainable Technologies, the Southern African Solar Thermal Training and Demonstration Initiative in six countries of the Southern African Development Community. This initiative promotes the use of and carries out training on solar heating devices. The Party also provided an update of its involvement in IEA joint implementation agreements, indicating that it has commissioned the Austrian Research Promotion Agency to administer Austria's participation in research and cooperation in the field of energy technologies, such as the commercialization of conventional and advanced biofuels and advanced solar cooling and heating systems.

⁴ FCCC/ARR/2018/AUT. The ERT notes that the report on the individual inventory review of Austria's 2019 annual submission has not been published yet. As a result, the latest previously published annual review report reflects the findings of the review of the Party's 2018 annual submission.

<i>ID#</i>	<i>Issue/problem classification^{a, b}</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
Energy			
E.1	1.B.2.b Natural gas – CO ₂ (E.5, 2018) Transparency	Provide transparent information in the NIR on the allocation of pyrogenic CO ₂ emissions from natural gas production.	<p>Resolved. Information on emissions from fuel combustion and fugitive emissions during natural gas production are reported under categories 1.A and 1.B, respectively. The Party explained in the NIR (p.191) that CO₂ emissions from flaring are reported under category 1.A.1.b (petroleum refining). Additional information on the allocation was provided in the NIR (p.186). Austria mentioned in the NIR (p.184) of the 2019 submission, which was not reviewed, that CO₂ emissions from flaring are considered negligible and reported under category 1.A.1.</p> <p>During the review, Austria explained that flaring at the only refinery in the country does not take place on a regular basis but is restricted to unplanned shutdowns or emergency situations as a safety system. Therefore the CO₂ emissions from flaring are considered very low and reporting them separately from the CH₄ emissions from flaring is not feasible. Austria explained that the EFs and calorific value of flared gas are based on analysis and the AD are metered. However, Austria also explained that those data are considered confidential and, for that reason, flaring is reported as “IE” in CRF tables 1.s.2 and 1.B.2 (see ID# E.9 in table 5).</p>
IPPU			
I.1	2.A.3 Glass production – CO ₂ (I.15, 2018) Transparency	Include accurate information in the NIR on the mass flow of carbonates.	Resolved. The Party reported in its NIR (table 128) revised information on the mass flow of carbonates and corrected values for the consumption of other carbonates used in glass production. Compared with the 2018 NIR, where it reported that consumption of other carbonates in glass production increased from 2,467 t in 2005 to 23,856 t in 2016, the Party reported in the 2020 NIR that consumption of other carbonates decreased from 2,467 to 391 t between 2005 and 2018, and that there was no consumption in 2016–2017. For 2005–2018, the Party reported verified AD (including small amounts of other carbonates) from the European Union Emissions Trading System. However, data on consumption of carbonates from the Association of the Austrian Glass Industry were used for 2016–2017 instead of European Union Emissions Trading System data owing to the wrong allocation of the data for one company for those years.
I.2	2.B.1 Ammonia production – CO ₂ (I.5, 2018) (I.10, 2016) (I.10, 2015) Transparency	Explain how the CO ₂ emissions from fertilizer production are allocated.	Resolved. The Party explained in the NIR (p.232) that CO ₂ and CH ₄ emissions from urea and fertilizer production are reported under CRF category 2.B.10.ii (other chemical bulk production, a country-specific category).
I.3	2.B.1 Ammonia production – CO ₂ (I.6, 2018) (I.11, 2016) (I.11, 2015) Comparability	Change the reporting for the recovery of CO ₂ from ammonia production from “NO” to the sum of CO ₂ bound in the three products (melamine, fertilizer and urea).	Resolved. The Party reported CO ₂ recovery emissions from ammonia production in CRF table 2(I).A-Hs1. The value for 2018, for example, is 137.52 kt CO ₂ eq. The estimation methodology is explained in the NIR (chap. 4.3.7.2, p.242, for production of fertilizers and urea, and figure 24 and p.233 for melamine).

ID#	Issue/problem classification ^{a, b}	Recommendation made in previous review report	ERT assessment and rationale
I.4	2.B.8 Petrochemical and carbon black production – CO ₂ (I.8, 2018) (I.12, 2016) (I.12, 2015) Transparency	Implement a transparent explanation as to why only ethylene is produced in the refinery and no other products such as propylene, or provide estimates if new information is available.	Resolved. The Party explained in its NIR (chap. 4.3.4.1, p.240) that there is only one plant producing ethylene in Austria and that the plant does not produce any other products for which an estimation methodology is provided in the 2006 IPCC Guidelines.
I.5	2.C.7 Other (metal industry) – SF ₆ (I.16, 2017) Convention reporting adherence	Update the key category analysis in the NIR so that it reflects the reporting of SF ₆ from secondary aluminium production in category 2.C.3 instead of 2.C.7.	Resolved. The Party reported in its NIR the corrected key category analysis, whereby SF ₆ emissions from secondary production of aluminium are correctly reported under category 2.C.3 (NIR tables 8 and 9 on key categories, and table 123 on key categories in the IPPU sector).

Agriculture

The previous ERT did not identify any issue that remained unresolved at the time of the publication of the previous review report.

LULUCF

L.1	4. General (LULUCF) – N ₂ O (L.8, 2018) Transparency	Ensure consistency in the figures in NIR table 225 and CRF table 4 or transparently explain in the NIR that the differences are due to the inclusion of indirect N ₂ O emissions in the NIR table.	Resolved. The Party reported emissions and removals from the LULUCF sector by subcategory in NIR table 224, equivalent to table 225 in the 2018 NIR. The ERT noted that the issue is resolved because NIR table 224 is consistent with CRF table 4 and other tables for the subcategories. For example, for 2018, both NIR table 224 and CRF table 4 report 0.45 kt N ₂ O emissions from the LULUCF sector.
L.2	4.A.1 Forest land remaining forest land – CO ₂ (L.2, 2018) (L.2, 2016) (L.2, 2015) (57, 2014) (60, 2013) (73, 2012) Completeness	Provide estimates of the carbon stock changes for forests not in yield when the new NFI data become available and use the correct notation key.	Addressing. Austria has not provided estimates but reported carbon stock changes in living biomass for forests not in yield as “NE”, in accordance with the recommendation from the previous reviews, pending availability of the new data. The NIR (p.387) explains that a new NFI started in 2016, which will be used for providing estimates for forests not in yield. During the review, Austria explained that the NFI is currently under preparation and that new data will be ready for submission in 2022, which is to be the last submission under the second commitment period of the Kyoto Protocol.
L.3	4.A.1 Forest land remaining forest land – CO ₂ (L.3, 2018) (L.3, 2016) (L.3, 2015) (58, 2014) Completeness	Provide estimates of the carbon stock changes in mineral soils for forests not in yield using the best available data. Alternatively, use the appropriate notation key and provide information justifying its use in the annual submission.	Addressing. Austria again reported carbon stock changes in mineral soils for forests not in yield as “NE” in CRF table 4.A. Information justifying the use of the notation key was not provided in CRF table 4.A or CRF table 9. During the review, Austria explained that the new NFI is currently under preparation (see ID# L.2 above) and, when completed, model runs for the soils of forests not in yield will be carried out and estimates reported.

Waste

W.1	5. General (waste) – CO ₂ , CH ₄ and N ₂ O	Correct NIR figure 40 to reflect the true mass waste flow, with an explanation in the NIR	Addressing. The Party reported a mass balance of solid waste in NIR figure 38, equivalent to figure 40 in the 2018 NIR. According to the NIR (table 300), the updated figure
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<i>ID#</i>	<i>Issue/problem classification^{a, b}</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
(W.8, 2018) Transparency		text of why the mass flow may not sum across its parts.	<p>specifies that rotting losses (i.e. emissions to air) are not included. However, the ERT noted that the issue has not been fully resolved because the mass flow still does not sum across the parts:</p> <p>(a) The value reported for mechanical and mechanical-biological treatment (0.52 Mt) does not match the sum of its parts (0.45 Mt), namely the sum of thermal treatment (0.34 Mt), recycling (0.03 Mt) and landfilled residues (0.08 Mt). The incorrect value for mechanical and mechanical-biological treatment leads to an incorrect value of the waste covered by the municipal waste collecting system (reported as 1.7 Mt). During the review, the Party explained that the figure shows solid waste flows only and that losses of water vapour and CO₂ from the degradation of organic matter during the biological process are gaseous losses to the air and therefore not included in the figure;</p> <p>(b) Waste collected separately (2.6 Mt) does not match the sum of its parts (2.655 Mt, or 2.7 Mt; hazardous waste, biogenic waste, sorting residues and recyclable material). During the review, the Party indicated that this error will be resolved in the 2021 submission.</p>
KP-LULUCF			
KL.1 FM – CO ₂ (KL.2, 2018) (KL.2, 2016) (KL.2, 2015) Transparency		Provide information on natural disturbance types whose emissions the Party wishes to exclude from accounting during the commitment period.	Resolved. The NIR (chap. 11.5.2.4) includes a list of the natural disturbance types (wildfire, pests, storm and snow) that the Party wishes to exclude from its accounting.

^a References in parentheses are to the paragraph(s) and the year(s) of the previous review report(s) in which the issue or problem was raised. Issues are identified in accordance with paras. 80–83 of the UNFCCC review guidelines and classified as per para. 81 of the same guidelines. Problems are identified and classified as problems of transparency, accuracy, consistency, completeness or comparability in accordance with para. 69 of the Article 8 review guidelines in conjunction with decision 4/CMP.11.

^b The report on the review of the 2019 annual submission of Austria was not available at the time of this review. Therefore, the recommendations reflected this table are taken from the 2018 annual review report. For the same reason, 2019 and 2017 are excluded from the list of review years in which issues could have been identified.

IV. Issues and problems identified in three or more successive reviews and not addressed by the Party

9. In accordance with paragraph 83 of the UNFCCC review guidelines, the ERT noted that the issues and/or problems included in table 4 have been identified in three or more successive reviews, including the review of the 2020 annual submission of Austria, and had not been addressed by the Party at the time of publication of this review report.

Table 4

Issues and/or problems identified in three or more successive reviews and not addressed by Austria

<i>ID#</i>	<i>Previous recommendation for the issue</i>	<i>Number of successive reviews issue not addressed^a</i>
General		
G.1	Enhance the QC practices, or the application of the existing practices, in order to ensure consistency between the NIR and the CRF tables.	3 (2015/2016–2020)

ID#	Previous recommendation for the issue	Number of successive reviews issue not addressed ^a
Energy	No issues identified.	
IPPU	No issues identified.	
Agriculture	No issues identified.	
LULUCF		
L.2	Provide estimates of the carbon stock changes for forests not in yield when the new NFI data become available and use the correct notation key.	6 (2012–2020)
L.3	Provide estimates of the carbon stock changes in mineral soils for forests not in yield using the best available data. Alternatively, use the appropriate notation key and provide information justifying its use in the annual submission.	4 (2014–2020)
Waste	No issues identified.	
KP-LULUCF	No issues identified.	

^a Reports on the reviews of the 2017 and 2019 annual submissions of Austria have not yet been published. Therefore, 2017 and 2019 were not included when counting the number of successive years for this table. In addition, as the reviews of the Party's 2015 and 2016 annual submissions were conducted together, they are not considered successive reviews and 2015/2016 is counted as one year.

V. Additional findings made during the individual review of the Party's 2020 annual submission

10. Table 5 presents findings made by the ERT during the individual review of the 2020 annual submission of Austria that are additional to those identified in table 3.

Table 5

Additional findings made during the individual review of the 2020 annual submission of Austria

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue/problem? ^a
General			
G.3	Uncertainty analysis	The Party did not include in the NIR an uncertainty analysis for its base year under the Convention (1990). The ERT noted that, in accordance with paragraph 15 of the UNFCCC Annex I inventory reporting guidelines, Parties are to report uncertainties for at least the base year and the latest inventory year. During the review, the Party provided the uncertainty analysis for 1990 (including and excluding LULUCF) and indicated that this will be included in the NIR of its next submission. The ERT recommends that Austria include in the NIR an uncertainty analysis for its base year under the Convention (1990).	Yes. Convention reporting adherence
G.4	Other	According to the NIR (chap. 9), Austria did not report indirect CO ₂ emissions in CRF table 6 and the only indirect CO ₂ emissions reported in the inventory were for the subcategory solvent use under category 2.D.3 other (non-energy	Yes. Comparability

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue/problem? ^a
<p>products from fuels and solvent use). The ERT noted that indirect CO₂ emissions from the IPPU sector were reported as “IE” in CRF table 6. However, indirect CO₂ emissions from the energy sector were also reported as “IE” in the same table. During the review, the Party clarified that for energy combustion categories (category 1.A) total carbon is considered in the CO₂ EFs, and therefore all potential indirect CO₂ emissions are reported under category 1.A. Austria further clarified that indirect CO₂ emissions associated with fugitive emissions (CH₄ and non-methane volatile organic compounds) in the energy sector were not estimated. For that reason, the Party indicated that it will report indirect CO₂ emissions for energy as “IE, NE” in CRF table 6 in the next submission (“IE” for energy combustion categories and “NE” for fugitive emissions), and relevant information will be provided in the NIR (chap. 9).</p> <p>The ERT recommends that the Party update the reporting of indirect CO₂ emissions from the energy sector in CRF table 6 by using the correct notation keys in accordance with paragraph 37 of the UNFCCC Annex I inventory reporting guidelines. The ERT also recommends that Austria update the information about indirect CO₂ emissions from the energy sector in the NIR (chap. 9), including revising the statement that only indirect CO₂ emissions from solvents (IPPU sector) were reported in the inventory. The ERT further recommends that the Party present the national totals with and without indirect CO₂ in the CRF tables and in the NIR, in accordance with paragraph 29 of the UNFCCC Annex I inventory reporting guidelines.</p>			
Energy			
E.2	Fuel combustion – reference approach – gasoline – CO ₂	<p>The ERT noted discrepancies in trade data for gasoline between the data in the CRF tables and the IEA data for all years:</p> <p>(a) For up to 2007, the import and export figures reported in CRF table 1.A(b) were systematically lower than the IEA data. These differences partially cancel each other out. For example, for 2007, 39,510.50 and 28,673.13 TJ were reported in the CRF table for imports and exports, respectively, but these values are 39,086.30 and 28,560.23 TJ, respectively, according to the IEA data;</p> <p>(b) For 2008 onward, the import figures reported in the CRF tables were higher (up to 6 per cent) than the IEA data, while the CRF export figures were higher for 2008–2011 and lower for afterwards. Such discrepancies led to differences in the gasoline apparent consumption reported in the CRF tables (–30 per cent to +25 per cent) for 2008–2018.</p> <p>During the review, Austria explained that gasoline has included biogasoline since 2005 and identified discrepancies between the national energy balance (used for the inventory) and IEA data for gasoline (motor gasoline, aviation gasoline and other gasoline), with the greatest deviation in 2009–2011 for stock change data and higher import data (5–19 kt) for the whole time series in the national energy balance. Austria indicated that it will investigate the reason for the discrepancy with national energy statistics authority and revise the figures in the next submission if necessary.</p> <p>The ERT encourages Austria to investigate the discrepancies between the national energy balance data and the IEA data on trade gasoline and to harmonize the reporting if necessary.</p>	Not an issue/problem
E.3	Fuel combustion – reference approach – gas/diesel oil – CO ₂	<p>The ERT noted that data on gas/diesel oil reported in the CRF tables and the IEA data show discrepancies for 2006 onward; in particular, import data are 4–8 per cent higher in CRF table 1.A(b) than the IEA data. Since discrepancies of a similar magnitude arise between the IEA and CRF table data for liquid biomass, this disparity may be due to the</p>	Not an issue/problem

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue/problem? ^a
		<p>inclusion of a biofuel component in the gas/diesel oil import data shown in CRF table 1.A(b) (trade data on biodiesel are reported to IEA for 2005 onward).</p> <p>During the review, Austria confirmed that the gas/diesel oil reported in CRF table 1.A(b) has included biodiesel since 2005, which is also reflected in the lower carbon EF for 2005–2018. Austria acknowledged that biofuels include biodiesel and bioethanol, which is a double counting with the figures for gasoline (which includes bioethanol) and gas/diesel oil (which includes biodiesel) and stated that it would eliminate the double counting of biofuels in its next submission by reporting diesel and gasoline without the biodiesel and bioethanol components.</p> <p>The ERT encourages Austria to resolve the discrepancy between the national energy balance data and IEA data for the import of gas/diesel oil for 2006 onward and provide estimates of emissions from biofuels in CRF table 1.A(b).</p>	
E.4	Fuel combustion – reference approach – refinery feedstocks – CO ₂	<p>The ERT noted that there is a discrepancy for 2018 in the exports of refinery feedstocks, with the data in CRF table 1.A(b) being 75 per cent (1,755 TJ) higher than the IEA data. During the review, Austria explained that refinery feedstocks include refinery feedstocks, coal tar and benzene. It acknowledged a double counting for coal tar (reported under both refinery feedstocks and coal tar) and explained that it plans to revise the method for the next submission.</p> <p>The ERT encourages Austria to resolve the discrepancy in the data on exports of refinery feedstocks between the national energy balance reflected in CRF table 1.A(b) and the IEA data by revising the method used to estimate coal tar.</p>	Not an issue/problem
E.5	1.A.3.a Civil aviation – jet kerosene – CO ₂ , CH ₄ and N ₂ O	<p>In its NIR (p.129), Austria explained that it used two different methodologies to estimate CO₂, CH₄ and N₂O emissions from IFR flights (i.e. cruise and LTO): a country-specific methodology consistent with IPCC tier 3b methodology for 1990–1999 and a tier 3a methodology for 2000 onward. The ERT noted that the use of different methods within the time series may imply time-series consistency issues. According to the 2006 IPCC Guidelines (vol. 1, chap. 5.3.3.1), when new inventory methods become available, splicing techniques such as overlap should be applied. During the review, Austria confirmed its use of two different methodologies to estimate emissions from IFR flights and indicated that it will apply the splicing techniques in the next submission to ensure time-series consistency.</p> <p>The ERT recommends that Austria ensure time-series consistency of the emission estimates for civil aviation and explain any recalculation in the NIR.</p>	Yes. Consistency
E.6	1.A.3.e.ii Other (other transportation) – CO ₂ , CH ₄ and N ₂ O	<p>In its NIR (p.140), Austria explained that fuel combustion emissions from airport ground activities are calculated from the difference between the figures for total fuel sold from the national energy balance and the fuel consumption for inland road transport and off-road transport calculated using a bottom-up approach, and are reported under category 1.A.3.b. The ERT noted that the 2006 IPCC Guidelines (vol. 2, chap. 3.3) mention that the off-road category (1.A.3.e.ii) includes emissions from airport ground support equipment. The ERT also noted that the 2006 IPCC Guidelines (vol. 2, chap. 3, table 3.1.1) indicate that category 1.A.3.e (other transportation) includes combustion emissions from all remaining transport activities, including ground activities at airports and harbours. The ERT noted that CRF table 1.A(a)s3 includes categories 1.A.3.e.i (pipeline transport) and 1.A.3.e.ii (other) and that emissions from ground activities at airports should be reported under category 1.A.3.e.ii.</p> <p>The ERT considers that the emissions from airport ground activities should be reported under category 1.A.3.e.ii (off-road transportation) in accordance with the 2006 IPCC Guidelines. During the review, Austria indicated that all emissions from national flights are reported under category 1.A.3.a. This includes cruise and LTO emissions. LTO</p>	Yes. Comparability

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		emissions incorporate all taxi-in and taxi-out emissions from aircraft, including auxiliary power units. Emissions from all other ground activities at airports, including buses and tankers, are reported under category 1.A.3.b. The ERT recommends that Austria report emissions from ground activities at airports under category 1.A.3.e.ii in line with the 2006 IPCC Guidelines (vol. 2, chap. 3.3, table 3.1.1).	
E.7	1.A.5.b Mobile – liquid fuels – CO ₂ , CH ₄ and N ₂ O	<p>In its NIR (p.177), Austria explained that for 2000 onward the fuel combustion for military aviation activities was estimated using linear extrapolation. The ERT noted that the 2006 IPCC Guidelines (vol. 1, chap. 5.3.3.4) mention that this method should not be used over long periods of time without checks to confirm the validity of the trend. The ERT considers that 2000–2018 is a long period of time and that Austria has not confirmed the validity of the trend.</p> <p>During the review, Austria indicated that it used linear extrapolation for confidentiality reasons, as requested by the Austrian Ministry of Defence. Austria considers that the increase in fuel consumption is plausible in view of the continued increase in its fleet of new helicopters and other aircraft. The Party noted that it will cease using linear trend extrapolation in the next few years since it has decided to make a renewed attempt to obtain data from the Austrian Ministry of Defence. Austria also explained the methodology for calculating emissions from military aviation. It used the figures for the total amount of kerosene from the national statistics and calculated the fuel consumption and emissions of all IFR flights (i.e. international cruise and LTO, domestic cruise and LTO) using a bottom-up approach, based on the flight movements per aircraft type depending on the flight distance. Austria then added the fuel consumption for category 1.A.5.b (i.e. the extrapolated amount) and made a comparison with the fuel sales from the national energy balance. The result is a deviation of 1.4 per cent between the bottom-up and top-down approaches, which is very small and confirms the validity of the linear extrapolation.</p> <p>Although the methodology used for estimating emissions from military aviation for 2000–2018 might appear to be sound because the validity of the trend was confirmed during the review, in view of the Party's acknowledgement of the increase in the military aviation fleet, the ERT recommends that the Party make efforts to improve the accuracy of the estimates by developing more efficient cooperation with the Austrian Ministry of Defence to resolve confidentiality issues. If the Party continues using linear extrapolation for the estimates, the ERT recommends that it demonstrate the validity of the trend in the NIR.</p>	Yes. Accuracy
E.8	1.B.2 Oil, natural gas and other emissions from energy production – oil and natural gas – CH ₄	<p>The Party reported in its NIR (p.187) that emissions from oil exploration (1.B.2.a.1) and natural gas exploration (1.B.2.1) are reported together under gas production (1.B.2.b.2). The Party calculated CH₄ emissions from gas production using an IPCC tier 1 methodology and an aggregated production-based EF of 0.0026 t CH₄/t oil and gas produced (NIR p.193). The 2006 IPCC Guidelines (vol. 2, chap. 4.2) suggest that Parties may need to apply greater disaggregation than provided in its table 4.2.1 when determining emissions from oil and natural gas systems. The ERT noted that since the Party has reported separate oil and gas production figures in CRF table 1.A(b) for primary fuels (i.e. crude oil and natural gas liquids), it should be in a position to estimate emissions at a more disaggregated level using higher-tier methodologies provided in the 2006 IPCC Guidelines (vol. 2, chap. 4.2.2.2).</p> <p>During the review, Austria explained that the estimation of 59 per cent of CH₄ emissions for category 1.B.2.b was calculated using a tier 2 methodology for combined oil, oil gas and natural gas and that disaggregating the AD would increase the AD uncertainty owing to the lack of reliable data. Austria mentioned that the estimation of emissions is in accordance with the 2006 IPCC Guidelines and that it will make an effort to develop a reliable disaggregation of AD related to oil, oil gas and natural gas.</p>	Yes. Transparency

<i>ID#</i>	<i>Finding classification</i>	<i>Description of the finding with recommendation or encouragement</i>	<i>Is finding an issue/problem?^a</i>
		<p>The ERT recommends that Austria explain in the NIR what percentage of CH₄ emissions for category 1.B.2.b were estimated using a tier 2 methodology and make efforts to report the emissions for category 1.B.2 disaggregated into categories 1.B.2.a.i and 1.B.2.b.i.</p>	
E.9	1.B.2.c Venting and flaring (flaring, gas) – natural gas – CO ₂	<p>Austria reported in its NIR (pp.191 and 193) that natural gas production occurs in the only refinery in the country and that all emissions from combustion in the refinery, including flaring, are included in category 1.A.1.b (petroleum refining) and not in 1.B.2.c (venting and flaring).</p> <p>During the review, Austria indicated that flaring at the only refinery in Austria does not take place on a regular basis but is restricted to unplanned shutdowns or emergency situations as a safety system. Therefore the CO₂ emissions from flaring are considered very low and reporting them separately from the CH₄ emissions from flaring is not feasible. Austria explained that the EFs and calorific value of flared gas are based on analysis and the AD are metered. However, it also explained that those data are considered confidential and, for that reason, flaring is reported as “IE” in CRF tables 1.s.2 and 1.B.2.</p> <p>The ERT recommends that Austria include in the NIR the explanation provided during the review related to the reporting of CO₂ emissions from gas flaring in category 1.A.1.b (petroleum refining) instead of category 1.B.2.c.2.ii (flaring (gas)) and provide in the NIR the specific basis, including the legal basis, for designating that information as confidential.</p>	Yes. Transparency
IPPU			
I.6	2.A.2 Lime production – CO ₂	<p>Austria reported in its NIR (chap. 4.2.2.2, p.220) that non-marketed lime production in the chemical industry is reported under category 2.A.3 (glass production). The Party also reported that CO₂ emissions from the lime production step in calcium carbide production are included in category 2.B.4. Austria stated in the NIR that the only identified non-marketed lime production in Austria is in calcium carbide production and sugar production. The ERT noted that CO₂ emissions from lime production in sugar production are reported under category 2.A.2 but could not identify in category 2.A.3 information on non-marketed lime in the chemical industry. The ERT also noted that for category 2.B.4 Austria reported production of caprolactam, glyoxal and glyoxylic acid as “NO” (in CRF table 2(I)s1). The ERT further noted that the 2006 IPCC Guidelines (vol. 3, chap. 2, p.2.20) indicate that all lime production, whether produced as a marketed or non-marketed product, should be reported under category 2.A.2 lime production.</p> <p>During the review, Austria clarified that the CO₂ emissions from non-marketed lime produced in the chemical industry are reported under category 2.B.5.b (carbide production) and explained that the text of its NIR was not updated when the categories changed. The Party indicated that it will correct the text in the NIR of its next submission.</p> <p>The ERT recommends that the Party report all lime production, whether produced as a marketed or non-marketed product, under category 2.A.2 lime production.</p>	Yes. Comparability
I.7	2.B.1 Ammonia production – CO ₂	<p>Ammonia production has been identified as a key category in the Austrian GHG inventory. The Party reported in its NIR (p.230) that ammonia is produced by catalytic steam reforming of natural gas in one plant, which includes the downstream processes. The Party reported that the CO₂ recovered from ammonia production is included in urea production and fertilizer production and stored in melamine (see ID# I.2 in table 3). The total CO₂ recovered was reported in NIR table 134 and CRF table 2(I).A-Hs1. The ERT noted, however, that the Party presented the CO₂</p>	Yes. Transparency

<i>ID#</i>	<i>Finding classification</i>	<i>Description of the finding with recommendation or encouragement</i>	<i>Is finding an issue/problem?^a</i>
		<p>estimation methodology for the production of fertilizers and urea in its NIR (chap. 4.3.7.2, p.242), while for carbon stored in melamine information was provided only to justify that the carbon is stored in melamine in the NIR (p.233).</p> <p>During the review, the Party clarified that CO₂ emissions avoided by incorporating carbon in melamine are stoichiometrically calculated with the urea input of the only ammonia production plant in the country, and that the operator provides the data annually.</p> <p>The ERT recommends that the Party describe in its NIR the methodology it uses to estimate CO₂ recovered by incorporating carbon into melamine.</p>	
I.8	2.C.1 Iron and steel production – CO ₂	<p>Austria reported in the NIR (chap. 4.4.1.5) that it recalculated the CO₂ emissions reported under category 2.C.1, which changed the time series for 2005 onward. However, it reported the impact only for 2017 in the NIR (p.247). The ERT noted that this is not in accordance with the 2006 IPCC Guidelines (vol. 1, chap. 5.4, table 5.2) because the Party should present the effect of the recalculation on the time series.</p> <p>During the review, Austria provided the ERT with the new data for the time series (1990–2018) and the effect of the recalculation of the CO₂ emissions for 2005–2017 in the format set out in the 2006 IPCC Guidelines (vol. 1, chap. 5.4, table 5.2).</p>	Not an issue/problem
I.9	2.C.1 Iron and steel production – CH ₄	<p>Austria did not include information in its NIR on CH₄ emissions from iron and steel production under category 2.C.1. Under this category, the Party reported CH₄ emissions from steel and pig iron production as “IE” and from sinter production as “NO” in CRF table 2(I).A-Hs2. In its description of category 1.A.2.a in the NIR, Austria reported estimates for CH₄ emissions from steel and pig iron (NIR table 44, p.112) and specified the methodology (tier 1) (NIR p.110). The ERT noted that in NIR table 138 (chap. 4.4.1.2, p.246) on AD, IEF and emissions for category 2.C.1, the title includes CH₄ emissions but those are not presented in the table. Austria explained in the NIR (p.244) that it used a carbon mass balance. During the review, the Party provided the ERT with the calculation datasheet for 2018. The ERT noted that the datasheet shows the assumption that all the carbon is emitted as CO₂.</p> <p>The 2006 IPCC Guidelines (vol. 3, p.4.23) indicate that the sintering process is part of the integrated iron and steel process and CH₄ is emitted from the sintering process. The 2006 IPCC Guidelines (vol. 3, chap. 4.2.2.2, p.4.19) include a methodology and default CH₄ EF (table 4.2) to estimate CH₄ emissions associated with sinter production. The ERT considers that, by assuming that all the emitted carbon is emitted as CO₂, Austria underestimated the CH₄ emissions, as part of the carbon is emitted as CH₄ during the sintering process.</p> <p>During the review, Austria clarified that including CH₄ in the title of NIR table 138 is wrong and will be corrected in the next submission. The Party also clarified that CH₄ emissions from pig iron and steel production will be reported as “NA” under category 2.C.1 as the 2006 IPCC Guidelines provide no default EF. The Party confirmed that for the estimation of CH₄ emissions from iron and steel production (category 1.A.2.a) the default tier 1 CH₄ EF from the 2006 IPCC Guidelines was used and that CH₄ emissions from the sintering process were not estimated. Also during the review, Austria provided the ERT with a preliminary estimation of the CH₄ emissions (e.g. less than 10 kt CO₂ eq for 2018) using a tier 1 methodology and the EF from the 2006 IPCC Guidelines (vol. 3, chap. 4.2.2.2, p.4.19 and table 4.2). The ERT noted that the underestimation is lower than the significance threshold mentioned in paragraph 37 of the UNFCCC Annex I inventory reporting guidelines (40 kt CO₂ eq for Austria’s 2020 submission).</p> <p>The ERT recommends that the Party report CH₄ emissions from iron and steel production, including sintering and pig iron production, under category 2.C.1 (or the category where those emissions are reported) for the entire time series</p>	Yes. Accuracy

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I.10	2.C.4 Magnesium production – SF ₆	<p>using a methodology consistent with the decision tree in the 2006 IPCC Guidelines (vol. 3, chap. 4, figure 4.8). The ERT also recommends that the Party include a description of the methodologies, AD and EFs used in the estimates. Alternatively, if the Party considers these emissions to be insignificant, the ERT recommends that the Party report them as “NE” and demonstrate that the likely level of emissions is below the significance threshold mentioned in paragraph 37 of the UNFCCC Annex I inventory reporting guidelines.</p> <p>The ERT also recommends that the Party review and if necessary revise the title of NIR table 138 (chap. 4.4.1.2, p.246) to make it consistent with the table’s content.</p> <p>The Party reported in its NIR (table 123, p.208) that category 2.C.4 represents SF₆ used in aluminium and magnesium foundries and identified it as a key category. Austria estimated the uncertainty for the AD, EFs and SF₆ emissions for the same category (i.e. SF₆ from aluminium and magnesium foundries) (NIR table 124, p.209).</p> <p>However, the ERT noted that the UNFCCC Annex I inventory reporting guidelines name category 2.C.4 as magnesium production and that the 2006 IPCC Guidelines (vol. 1, table 8.2) indicate that this category includes GHG emissions from both primary magnesium production and oxidation protection of magnesium metal during processing (recycling and casting), excluding those emissions relating to fuel use. The ERT also noted that in the NIR (chap. 4.4.4, p.251) the description of category 2.C.4 indicates that only SF₆ emissions from magnesium foundries are included in this category.</p> <p>During the review, the Party clarified that the reporting of SF₆ emissions from metal production has been improved for transparency reasons; emissions were reallocated and therefore the names of the categories also had to be adapted. Austria confirmed that the information about category 2.C.4 in the NIR (p.251) is correct and that category 2.C.4 includes only SF₆ from magnesium and not from aluminium production. Austria stated that the uncertainty analysis table in the NIR (table 123, p.208) has not yet been updated and will be corrected for the next submission.</p> <p>The ERT recommends that the Party correct NIR tables 123 (on key categories in the IPPU sector) and 124 (on uncertainty analysis for the IPPU sector) by including the information that only SF₆ emissions from magnesium foundries are reported in category 2.C.4.</p>	Yes. Convention reporting adherence
I.11	2.C.7 Other (metal industry) – SF ₆	<p>Austria reported the uncertainty assessment of AD, EFs and SF₆ emissions for category 2.C.7 in its NIR (chap. 4.1.4, table 124, p.209). However, it reported blank cells for AD and SF₆ emissions for this category in CRF tables 2(II) and 2(II)B-Hs1. During the review, the Party clarified that SF₆ emissions from metal production were reallocated from category 2.C.7 to category 2.C.3 (see ID# I.5 in table 3) but NIR table 124 has not yet been updated. It indicated that this will be corrected for its next submission.</p> <p>The ERT recommends that Austria correct NIR table 124 on the uncertainty analysis for the IPPU sector by deleting the uncertainty values for AD, EFs and SF₆ emissions for this category.</p>	Yes. Convention reporting adherence
Agriculture			
A.1	3. General (agriculture) – CH ₄ and N ₂ O	<p>The Party reported that it improved its estimates for agriculture in response to an encouragement from the 2018 annual review report (ID# A.3 in table 6) to incorporate the newly available research by using the 2019 EMEP/EEA air pollutant emission inventory guidebook (EEA, 2019). Austria followed the N-flow approach by using country-specific methodologies for the calculation of direct N₂O emissions from animal manure applied to soils (3.D.a.2.a) and indirect N₂O emissions from leaching and run-off (3.D.b.2) (see NIR pp.290 and 300; and CRF table 3.B(a)).</p>	Not an issue/problem

<i>ID#</i>	<i>Finding classification</i>	<i>Description of the finding with recommendation or encouragement</i>	<i>Is finding an issue/problem?^a</i>
		The improvements resulted in an increase in the estimated CH ₄ emissions of 0.06 kt and an increase in the estimated direct N ₂ O emissions of 0.002 kt for 2017. The ERT noted that this is an improvement in accuracy compared with Austria's 2018 submission and in accordance with the 2006 IPCC Guidelines (vol. 4, chap. 10.4, figure 10.3).	
A.2	3.B.5 Indirect N ₂ O emissions – N ₂ O	<p>The Party reported in its NIR (p.300) and CRF tables 3.B(a)s1 and 3.B(a)s2 that its agriculture model is based on the N-flow concept. Thus, revisions within Austria's air emission inventory affect the calculation results in its GHG inventory. The main reason for the revised figures for indirect N₂O emissions (for atmospheric deposition from manure management) is the use of the 2019 EMEP/EEA air pollutant emission inventory guidebook for Austria's air emission inventory. The guidebook provides updated NH₃ EFs for specific livestock categories and a revised calculation method for the fraction of total ammoniacal N that is immobilized in organic matter when the manure is managed as a litter-based solid and the litter is straw.</p> <p>Improved calculations resulted in lower estimated NH₃-N losses from manure management. Consequently, estimated indirect N₂O emissions from manure management were revised downward for the whole time series (by 0.02 kt for 2017).</p> <p>The ERT commends the Party for the improvements made to its calculation of indirect N₂O emissions in accordance with the 2006 IPCC Guidelines (vol. 4, chap. 10.4, figure 10.4).</p>	Not an issue/problem
LULUCF			
L.4	4.A.2.1 Cropland converted to forest land – CO ₂	<p>The Party reported annual carbon stock changes for deadwood in the areas of land-use change to and from forest in NIR table 242 (p.406), but did not clearly explain how deadwood in perennial cropland was taken into account in estimating the emissions and removals from cropland converted to forest land. NIR table 242 shows only the carbon stock gains for deadwood, while the transition from perennial cropland to forest land includes the emissions arising from deadwood stock in perennial cropland.</p> <p>During the review, the Party clarified that the carbon stock gains reported in NIR table 242 are based on repeated measurements at NFI plots representing land-use change to forest, including the transition from perennial cropland to forest land. These measured values of carbon stock gains also take into account cases where deadwood was already at the site at the time of land-use change.</p> <p>The ERT recommends that the Party explain how the estimates of carbon stock gains in the deadwood pool take into account the deadwood already present in perennial cropland before the transition to forest land.</p>	Yes. Transparency
Waste			
W.2	5.B.1 Composting – CH ₄ and N ₂ O	The Party reported the country-specific CH ₄ and N ₂ O EFs for mechanical-biological treatment and composting of waste in NIR table 285 (p.498) that are used for the estimates for category 5.B.1 (composting). The EFs are provided separately for CH ₄ and N ₂ O in kg/t "FS". However, the ERT could not identify the definition of "FS" and could not follow how the values for CH ₄ EFs reported in the NIR (0.6 kg/t "FS" for mechanical-biological treatment and 0.75 kg/t "FS" for composting) were combined into the CH ₄ IEF for category 5.B.1 reported in CRF table 5.B (1.83 g/kg waste; no recovery, no flaring); or how the N ₂ O EF reported in the NIR (0.1 kg/t "FS") was converted into the N ₂ O IEF reported for category 5.B.1 in CRF table 5.B (0.25 g/kg waste). The ERT considers that the description of mechanical-biological treatment and composting in the NIR is not clear enough to enable understanding of the information on category 5.B.1 reported in CRF table 5.B.	Yes. Transparency

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue/problem? ^a
		The ERT recommends that the Party describe in more detail in the NIR its mechanical-biological and composting treatment of waste and how the data and EFs presented in the NIR relate to the data and IEFs reported in CRF table 5.B.	
W.3	5.B.2 Anaerobic digestion at biogas facilities – N ₂ O	<p>The Party reported N₂O emissions for category 5.B.2 as “NA” in NIR table 276 (p.480) with a footnote explaining that the emissions are negligible. However, the emissions were reported as “NO, NA” in CRF tables 5 and 5.B. During the review, the Party explained that the 2006 IPCC Guidelines (vol. 5, p.4.4) do not include a default estimation methodology but indicate that N₂O emissions from anaerobic digestion of organic waste are likely to be negligible. The ERT noted that the UNFCCC Annex I inventory reporting guidelines, in a footnote to paragraph 37(b), indicate that “NE” could also be used when an activity occurs in the country but the 2006 IPCC Guidelines do not provide a methodology to estimate the emissions.</p> <p>The ERT recommends that the Party report N₂O emissions for category 5.B.2 as “NE” in CRF tables 5 and 5.B and the NIR, consistently with paragraph 37(b) of the UNFCCC Annex I inventory reporting guidelines, and justify its reporting by explaining that the 2006 IPCC Guidelines (vol. 5, p.4.4 and table 4.1) do not include a default EF but indicate that N₂O emissions from anaerobic digestion of organic waste are assumed to be negligible.</p>	Yes. Comparability
W.4	5.C.1 Waste incineration – CO ₂ , CH ₄ and N ₂ O	<p>The Party reported that its incinerated waste consists of municipal, clinical and waste oil fractions in the NIR (chap. 7.4.2.1, p.501). However, CRF table 5.C indicates that only municipal waste is incinerated, and reports other waste as “NO”. The ERT noted that, as the Party has the corresponding fractions of incinerated waste (municipal, clinical and waste oil), the use of the category other for estimating emissions from clinical waste and waste oil would be more appropriate.</p> <p>The ERT recommends that the Party report emissions from incineration of clinical waste and waste oil separately from emissions from municipal waste incineration.</p>	Yes. Comparability
W.5	5.D.1 Domestic wastewater – CH ₄	<p>The Party reported in the NIR (chap. 7.5.2.1, p.506) that the CH₄ produced in the course of anaerobic treatment at wastewater treatment plants is recovered and used in combined heat and power generation systems, and is flared in the case of overload or technical disruptions. However, both flared and recovered CH₄ from domestic wastewater were reported as “NA” in CRF table 5.D. The ERT noted that there is inconsistency between the NIR and CRF table 5.D and that the use of the notation key “NA” is probably incorrect.</p> <p>The ERT recommends that the Party provide consistent information in CRF table 5.D and the NIR (either estimates or the correct notation key for the recovered and flared CH₄ from domestic wastewater).</p>	Yes. Convention reporting adherence
W.6	5.D.2 Industrial wastewater – CH ₄	<p>The Party reported in its NIR (chap. 7.1.4, p.481, and chap. 7.5.2.2, p.512) that the country-specific CH₄ EF for CH₄ emissions from industrial wastewater plants is based on the assumption (from research conducted in 2019 by Environment Agency Austria) that only 1 per cent of the CH₄ generated in the anaerobic treatment is emitted. The low value of 1 per cent of the CH₄ generated was justified in the NIR by reporting that some industries carry out anaerobic pre-treatment of their industrial wastewater on site with recovery of the generated CH₄, which leads to a very small amount of CH₄ being left in the industrial wastewater released to the wastewater treatment plants.</p> <p>During the review, in response to a question of the ERT about the number of companies practising anaerobic pre-treatment of their industrial wastewater with CH₄ recovery in the country, the Party clarified that such companies are in the minority (e.g. 5 out of a total of 22 paper plants, 2 out of 8 big brewery plants, 2 out of 6 fruit juice plants, 2 out of 3 starch production plants and 1 out of 2 sugar production plants), while meat and milk production plants do not</p>	Yes. Accuracy

<i>ID#</i>	<i>Finding classification</i>	<i>Description of the finding with recommendation or encouragement</i>	<i>Is finding an issue/problem?^a</i>
		<p>practise such pre-treatment at all. The ERT questions the assumption that just 1 per cent of the CH₄ generated at all wastewater treatment plants is emitted.</p> <p>The ERT recommends that the Party review the assumption of the chosen coefficient (1 per cent) for all the industrial wastewater plants, exploring the shares of the industrial wastewater plants with and without anaerobic pre-treatment, and improve the transparency of its reporting by specifying in the NIR the scope and results of the research conducted in 2019 by Environment Agency Austria. The ERT also recommends that, for the industrial wastewater plants and industries (meat and milk production) that do not practise anaerobic pre-treatment, the Party (1) use a more appropriate EF according to the type of treatment used in the industrial wastewater plants, as indicated in the 2006 IPCC Guidelines (vol. 5, chap. 6.2.3.2); (2) report the estimated emissions instead of reporting “NA” for AD as in CRF table 5.D of the 2020 submission; and (3) report the results of the review in the NIR and, if applicable, explain in the NIR any recalculations.</p>	
KP-LULUCF			
KL.2	HWP – CO ₂	<p>The Party reported the share of harvest originating from FM, AR and deforestation in NIR table 314 (p.549) to obtain the emissions and removals from HWP. However, it did not explain how the shares of harvest were obtained. During the review, the Party clarified that the share of harvest is estimated on the basis of the above-ground biomass loss, including harvest and mortality, for each of the three activities (FM, AR and deforestation). The above-ground biomass loss for these activities, which is calculated from single tree cuttings in most cases, is directly measured at the relevant NFI plots. The total above-ground biomass loss for all forests in Austria and those at the AR and deforestation areas are measured values. The above-ground biomass loss at the FM areas is estimated as a balance, by subtracting the measured above-ground biomass loss at the AR and deforestation areas from the measured total above-ground biomass loss for all Austrian forests. The Party also provided data for annual above-ground biomass loss (kt carbon) and respective areas of each KP-LULUCF activity from the 2013 NFI.</p> <p>The ERT recommends that the Party explain how it obtains the shares of harvest originating from FM, AR and deforestation that it uses in the estimation of the emissions and removals from HWP by including in the NIR the following information: (1) the share of harvest is estimated on the basis of the above-ground biomass loss, including harvest and mortality, for each of the three activities; (2) the above-ground biomass loss for the activities, which is calculated from single tree cuttings in most cases, is directly measured at the NFI plots that belong to the activities; (3) the total above-ground biomass loss for all forests in Austria and those at the AR and deforestation areas are measured values; and (4) the above-ground biomass loss at the FM areas is estimated as a balance, by subtracting the measured above-ground biomass loss at the AR and deforestation areas from the measured total above-ground biomass loss for all Austrian forests. The ERT also recommends that the Party provide disaggregated data for annual above-ground biomass loss (in kt carbon) and respective areas of each KP-LULUCF activity (i.e. not the areas of harvest but the areas of each KP-LULUCF activity used to obtain the share of harvest) and the source of the data.</p>	Yes. Transparency

^a Recommendations made by the ERT during the review are related to issues as defined in para. 81 of the UNFCCC review guidelines or problems as defined in para. 69 of the Article 8 review guidelines.

VI. Application of adjustments

11. The ERT did not identify the need to apply any adjustments for the 2020 annual submission of Austria.

VII. Accounting quantities for activities under Article 3, paragraph 3, and, if any, activities under Article 3, paragraph 4, of the Kyoto Protocol

12. Austria elected commitment period accounting and therefore the issuance and cancellation of units for KP-LULUCF is not applicable to the 2020 review.

VIII. Questions of implementation

13. No questions of implementation were identified by the ERT during the individual review of the Party's 2020 annual submission.

Annex I

Overview of greenhouse gas emissions and removals and data and information on activities under Article 3, paragraphs 3–4, of the Kyoto Protocol, as submitted by Austria in its 2020 annual submission

1. Tables I.1–I.4 provide an overview of the total GHG emissions and removals as submitted by Austria.

Table I.1

Total greenhouse gas emissions for Austria, base year^a–2018

(kt CO₂ eq)

	Total GHG emissions excluding indirect CO ₂ emissions		Total GHG emissions including indirect CO ₂ emissions ^b		Land-use change (Article 3.7 bis as contained in the Doha Amendment) ^c	KP-LULUCF (Article 3.3 of the Kyoto Protocol) ^d	KP-LULUCF (Article 3.4 of the Kyoto Protocol)	
	Total including LULUCF	Total excluding LULUCF	Total including LULUCF	Total excluding LULUCF			CM, GM, RV, WD	FM
FMRL								–6 516.00
Base year	66 514.68	78 503.12	NA	NA	NA		NA	
1990	66 504.17	78 492.61	NA	NA				
1995	66 244.58	79 382.99	NA	NA				
2000	63 870.54	80 261.99	NA	NA				
2010	78 835.78	84 612.84	NA	NA				
2011	76 282.06	82 286.89	NA	NA				
2012	74 181.27	79 528.79	NA	NA				
2013	75 575.74	79 971.98	NA	NA		–1 481.07	NA	–3 477.70
2014	71 743.12	76 346.01	NA	NA		–1 506.70	NA	–3 669.55
2015	74 070.77	78 509.78	NA	NA		–1 546.94	NA	–3 515.33
2016	75 196.41	79 467.29	NA	NA		–1 586.59	NA	–3 363.45
2017	77 171.50	82 023.36	NA	NA		–1 637.13	NA	–3 894.80
2018	73 797.67	78 950.34	NA	NA		–1 683.11	NA	–4 128.54

Note: Emissions and removals reported in the sector other (sector 6) are not included in the total GHG emissions.

^a “Base year” refers to the base year under the Kyoto Protocol, which is 1990 for all gases except NF₃, for which the base year is 2000. Austria has not elected any activities under Article 3, para. 4, of the Kyoto Protocol. For activities under Article 3, para. 3, of the Kyoto Protocol and FM under Article 3, para. 4, only the inventory years of the commitment period must be reported.

^b The Party did not report indirect CO₂ emissions in CRF table 6.

^c The value reported in this column relates to GHG emissions from conversion of forests (deforestation) in 1990 as contained in the report on the review of the report to facilitate the calculation of the assigned amount for the second commitment period of the Kyoto Protocol of the Party.

^d Activities under Article 3, para. 3, of the Kyoto Protocol, namely AR and deforestation.

Table I.2

Greenhouse gas emissions by gas for Austria, excluding land use, land-use change and forestry, 1990–2018(kt CO₂ eq)

	<i>CO₂^a</i>	<i>CH₄</i>	<i>N₂O</i>	<i>HFCs</i>	<i>PFCs</i>	<i>Unspecified mix of HFCs and PFCs</i>	<i>SF₆</i>	<i>NF₃</i>
1990	62 124.70	10 391.46	4 320.62	2.44	1 182.79	NA, NO	470.61	NA, NO
1995	64 065.26	9 530.41	4 243.98	353.45	83.35	NA, NO	1 100.11	6.44
2000	66 162.89	8 393.11	4 319.46	713.63	87.87	NA, NO	574.53	10.51
2010	72 011.84	7 308.66	3 388.64	1 485.66	78.05	NA, NO	335.87	4.12
2011	69 898.24	7 108.46	3 481.30	1 413.93	73.51	NA, NO	307.35	4.10
2012	67 209.10	7 006.74	3 449.44	1 492.36	50.72	NA, NO	311.88	8.56
2013	67 745.69	6 907.10	3 434.52	1 520.37	49.23	NA, NO	305.32	9.75
2014	64 084.43	6 777.45	3 518.70	1 587.86	53.03	NA, NO	313.98	10.56
2015	66 283.24	6 702.06	3 528.50	1 623.43	49.55	NA, NO	309.55	13.46
2016	67 112.27	6 642.61	3 620.06	1 642.99	50.39	NA, NO	392.84	6.14
2017	69 628.86	6 626.11	3 561.80	1 750.56	44.09	NA, NO	399.93	12.01
2018	66 719.68	6 438.63	3 526.08	1 834.76	32.52	NA, NO	382.15	16.51
Percentage change 1990–2018	7.4	–38.0	–18.4	75 170.3	–97.3	NA	–18.8	NA

Note: Emissions and removals reported in the sector other (sector 6) are not included in this table.

^a Austria did not report indirect CO₂ emissions in CRF table 6.

Table I.3

Greenhouse gas emissions by sector for Austria, 1990–2018(kt CO₂ eq)

	<i>Energy</i>	<i>IPPU</i>	<i>Agriculture</i>	<i>LULUCF</i>	<i>Waste</i>	<i>Other</i>
1990	52 815.50	13 662.34	8 088.51	–11 988.44	3 926.27	NO
1995	54 357.82	13 604.92	7 767.56	–13 138.41	3 652.69	NO
2000	55 299.82	14 610.27	7 386.87	–16 391.44	2 965.02	NO
2010	59 448.34	15 923.56	7 079.65	–5 777.06	2 161.30	NO
2011	57 124.93	15 965.62	7 150.42	–6 004.82	2 045.91	NO
2012	54 917.78	15 565.42	7 099.92	–5 347.52	1 945.67	NO
2013	55 168.78	15 884.90	7 090.96	–4 396.24	1 827.34	NO

	<i>Energy</i>	<i>IPPU</i>	<i>Agriculture</i>	<i>LULUCF</i>	<i>Waste</i>	<i>Other</i>
2014	51 380.02	16 008.92	7 232.82	–4 602.89	1 724.25	NO
2015	53 037.79	16 585.23	7 246.14	–4 439.01	1 640.63	NO
2016	54 162.92	16 383.29	7 360.92	–4 270.88	1 560.15	NO
2017	56 013.09	17 209.27	7 313.78	–4 851.86	1 487.22	NO
2018	54 693.38	15 613.09	7 224.35	–5 152.67	1 419.52	NO
Percentage change 1990–2018	3.6	14.3	–10.7	–57.0	–63.8	NA

Notes: (1) Austria did not report emissions or removals in the sector other (sector 6); (2) Austria did not report indirect CO₂ emissions in CRF table 6.

Table I.4

Greenhouse gas emissions and removals from activities under Article 3, paragraphs 3–4, of the Kyoto Protocol by activity, base year^a–2018, for Austria
(kt CO₂ eq)

	<i>Article 3.7 bis as contained in the Doha Amendment^b</i>	<i>Activities under Article 3.3 of the Kyoto Protocol</i>		<i>FM and elected activities under Article 3.4 of the Kyoto Protocol</i>				
	<i>Land-use change</i>	<i>AR</i>	<i>Deforestation</i>	<i>FM</i>	<i>CM</i>	<i>GM</i>	<i>RV</i>	<i>WDR</i>
FMRL				–6 516.00				
Technical correction				5 823.00				
Base year	NA				NA	NA	NA	NA
2013		–2 017.55	536.48	–3 477.70	NA	NA	NA	NA
2014		–2 031.47	524.77	–3 669.55	NA	NA	NA	NA
2015		–2 065.27	518.33	–3 515.33	NA	NA	NA	NA
2016		–2 098.48	511.89	–3 363.45	NA	NA	NA	NA
2017		–2 142.58	505.45	–3 894.80	NA	NA	NA	NA
2018		–2 182.11	499.01	–4 128.54	NA	NA	NA	NA
Percentage change base year–2018					NA	NA	NA	NA

Note: Values in this table include emissions from land subject to natural disturbances, if applicable.

^a Austria has not elected any activities under Article 3, para. 4, of the Kyoto Protocol. For activities under Article 3, para. 3, of the Kyoto Protocol, and FM under Article 3, para. 4, only the inventory years of the commitment period must be reported.

^b The value reported in this column relates to 1990.

2. Table I.5 provides an overview of key relevant data from Austria's reporting under Article 3, paragraphs 3–4, of the Kyoto Protocol.

Table I.5

Key relevant data for Austria under Article 3, paragraphs 3–4, of the Kyoto Protocol from its 2020 annual submission

<i>Parameter</i>	<i>Data values</i>
Periodicity of accounting	(a) AR: commitment period accounting (b) Deforestation: commitment period accounting (c) FM: commitment period accounting (d) CM: not elected (e) GM: not elected (f) RV: not elected (g) WDR: not elected
Elected activities under Article 3, paragraph 4, of the Kyoto Protocol	None
Election of application of provisions for natural disturbances	Yes, for FM
3.5% of total base-year GHG emissions, excluding LULUCF	2 759.930 kt CO ₂ eq (22 079.438 kt CO ₂ eq for the duration of the commitment period)
Cancellation of AAUs, CERs and ERUs and/or issuance of RMUs in the national registry for:	
1. AR	NA
2. Deforestation	NA
3. FM	NA

Annex II

Information to be included in the compilation and accounting database

Tables II.1–II.6 include the information to be included in the compilation and accounting database for Austria. Data shown are from the Party's annual submission, including the latest revised estimates submitted, adjustments (if applicable) and the final data to be included in the compilation and accounting database.

Table II.1

Information to be included in the compilation and accounting database for 2018, including on the commitment period reserve, for Austria
(t CO₂ eq)

	<i>Original submission</i>	<i>Revised estimate</i>	<i>Adjustment</i>	<i>Final</i>
CPR	365 141 085	–	–	365 141 085
Annex A emissions				
CO ₂	66 719 678	–	–	66 719 678
CH ₄	6 438 632	–	–	6 438 632
N ₂ O	3 526 083	–	–	3 526 083
HFCs	1 834 479	–	–	1 834 759
PFCs	32 519	–	–	32 519
Unspecified mix of HFCs and PFCs	NA, NO	–	–	NA, NO
SF ₆	382 154	–	–	382 154
NF ₃	16 512	–	–	16 512
Total Annex A sources	78 950 336	–	–	78 950 336
Activities under Article 3, paragraph 3, of the Kyoto Protocol				
AR	–2 182 114	–	–	–2 182 114
Deforestation	499 006	–	–	499 006
FM and elected activities under Article 3, paragraph 4, of the Kyoto Protocol				
FM	–4 128 542	–	–	–4 128 542

Table II.2

Information to be included in the compilation and accounting database for 2017 for Austria
(t CO₂ eq)

	<i>Original estimate</i>	<i>Revised estimate</i>	<i>Adjustment</i>	<i>Final value</i>
Annex A emissions				
CO ₂	69 628 860	–	–	69 628 860
CH ₄	6 626 107	–	–	6 626 107
N ₂ O	3 561 803	–	–	3 561 803
HFCs	1 750 563	–	–	1 750 563
PFCs	44 090	–	–	44 090
Unspecified mix of HFCs and PFCs	NA, NO	–	–	NA, NO
SF ₆	399 930	–	–	399 930
NF ₃	12 006	–	–	12 006
Total Annex A sources	82 023 358	–	–	82 023 358
Activities under Article 3, paragraph 3, of the Kyoto Protocol				
AR	–2 142 580	–	–	–2 142 580
Deforestation	505 447	–	–	505 447
FM and elected activities under Article 3, paragraph 4, of the Kyoto Protocol				
FM	–3 894 800	–	–	–3 894 800

Table II.3

Information to be included in the compilation and accounting database for 2016 for Austria(t CO₂ eq)

	<i>Original submission</i>	<i>Revised estimate</i>	<i>Adjustment</i>	<i>Final</i>
Annex A emissions				
CO ₂	67 112 265	—	—	67 112 265
CH ₄	6 642 608	—	—	6 642 608
N ₂ O	3 620 061	—	—	3 620 061
HFCs	1 642 989	—	—	1 642 989
PFCs	50 390	—	—	50 390
Unspecified mix of HFCs and PFCs	NA, NO	—	—	NA, NO
SF ₆	392 837	—	—	392 837
NF ₃	6 140	—	—	6 140
Total Annex A sources	79 467 291	—	—	79 467 291
Activities under Article 3, paragraph 3, of the Kyoto Protocol				
AR	–2 098 479	—	—	–2 098 479
Deforestation	511 889	—	—	511 889
FM and elected activities under Article 3, paragraph 4, of the Kyoto Protocol				
FM	–3 363 451	—	—	–3 363 451

Table II.4

Information to be included in the compilation and accounting database for 2015 for Austria(t CO₂ eq)

	<i>Original submission</i>	<i>Revised estimate</i>	<i>Adjustment</i>	<i>Final</i>
Annex A emissions				
CO ₂	66 283 237	—	—	66 283 237
CH ₄	6 702 057	—	—	6 702 057
N ₂ O	3 528 503	—	—	3 528 503
HFCs	1 623 432	—	—	1 623 432
PFCs	49 549	—	—	49 549
Unspecified mix of HFCs and PFCs	NA, NO	—	—	NA, NO
SF ₆	309 547	—	—	309 547
NF ₃	13 459	—	—	13 459
Total Annex A sources	78 509 783	—	—	78 509 783
Activities under Article 3, paragraph 3, of the Kyoto Protocol				
AR	–2 065 274	—	—	–2 065 274
Deforestation	518 330	—	—	518 330
FM and elected activities under Article 3, paragraph 4, of the Kyoto Protocol				
FM	–3 515 326	—	—	–3 515 326

Table II.5

Information to be included in the compilation and accounting database for 2014 for Austria(t CO₂ eq)

	<i>Original submission</i>	<i>Revised estimate</i>	<i>Adjustment</i>	<i>Final</i>
Annex A emissions				
CO ₂	64 084 427	—	—	64 084 427
CH ₄	6 777 446	—	—	6 777 446
N ₂ O	3 518 695	—	—	3 518 695
HFCs	1 587 864	—	—	1 587 864
PFCs	53 029	—	—	53 029

	<i>Original submission</i>	<i>Revised estimate</i>	<i>Adjustment</i>	<i>Final</i>
Unspecified mix of HFCs and PFCs	NA, NO	–	–	NA, NO
SF ₆	313 983	–	–	313 983
NF ₃	10 563	–	–	10 563
Total Annex A sources	76 346 007	–	–	76 346 007
Activities under Article 3, paragraph 3, of the Kyoto Protocol				
AR	–2 031 473	–	–	–2 031 473
Deforestation	524 772	–	–	524 772
FM and elected activities under Article 3, paragraph 4, of the Kyoto Protocol				
FM	–3 669 552	–	–	–3 669 552

Table II.6

Information to be included in the compilation and accounting database for 2013 for Austria(t CO₂ eq)

	<i>Original submission</i>	<i>Revised estimate</i>	<i>Adjustment</i>	<i>Final</i>
Annex A emissions				
CO ₂	67 745 690	–	–	67 745 690
CH ₄	6 907 097	–	–	6 907 097
N ₂ O	3 434 520	–	–	3 434 520
HFCs	1 520 367	–	–	1 520 367
PFCs	49 229	–	–	49 229
Unspecified mix of HFCs and PFCs	NA, NO	–	–	NA, NO
SF ₆	305 320	–	–	305 320
NF ₃	9 752	–	–	9 752
Total Annex A sources	79 971 975	–	–	79 971 975
Activities under Article 3, paragraph 3, of the Kyoto Protocol				
AR	–2 017 550	–	–	–2 017 550
Deforestation	536 481	–	–	536 481
FM and elected activities under Article 3, paragraph 4, of the Kyoto Protocol				
FM	–3 477 696	–	–	–3 477 696

Annex III

Additional information to support findings in table 2

Missing categories that may affect completeness

The categories for which estimation methods are included in the 2006 IPCC Guidelines that were reported as “NE” or for which the ERT otherwise determined that there may be an issue with the completeness of the reporting in the Party’s inventory are the following:

- (a) 4.A.1 Forest land remaining forest land – carbon stock change in living biomass for forests not in yield – CO₂ (see ID# L.2 in table 3);
- (b) 4.A.1 Forest land remaining forest land – carbon stock change in mineral soils for forests not in yield – CO₂ (see ID# L.3 in table 3).

Annex IV

Reference documents

A. Reports of the Intergovernmental Panel on Climate Change

IPCC. 2006. *2006 IPCC Guidelines for National Greenhouse Gas Inventories*. S Eggleston, L Buendia, K Miwa, et al. (eds.). Hayama, Japan: Institute for Global Environmental Strategies. Available at <http://www.ipcc-nggip.iges.or.jp/public/2006gl>.

IPCC. 2014. *2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol*. T Hiraishi, T Krug, K Tanabe, et al. (eds.). Hayama, Japan: Institute for Global Environmental Strategies. Available at <https://www.ipcc.ch/publication/2013-revised-supplementary-methods-and-good-practice-guidance-arising-from-the-kyoto-protocol/>.

IPCC. 2014. *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands*. T Hiraishi, T Krug, K Tanabe, et al. (eds.). Geneva: IPCC. Available at <https://www.ipcc.ch/publication/2013-supplement-to-the-2006-ipcc-guidelines-for-national-greenhouse-gas-inventories-wetlands/>.

B. UNFCCC documents

Annual review reports

Reports on the individual reviews of the 2012, 2013, 2014, 2015, 2016 and 2018 annual submissions of Austria, contained in documents FCCC/ARR/2012/AUT, FCCC/ARR/2013/AUT, FCCC/ARR/2014/AUT, FCCC/ARR/2015/AUT, FCCC/ARR/2016/AUT and FCCC/ARR/2018/AUT, respectively.

Other

Aggregate information on greenhouse gas emissions by sources and removals by sinks for Parties included in Annex I to the Convention. Note by the secretariat. Available at https://unfccc.int/sites/default/files/resource/AGI_2020_final.pdf.

Annual status report for Austria for 2020. Available at https://unfccc.int/sites/default/files/resource/asr2020_AUT.pdf.

C. Other documents used during the review

Responses to questions during the review were received from Günther Schmidt (Environment Agency Austria), including additional material on the methodology and assumptions used. The following references have been reproduced as received:¹

EEA. 2019. *EMEP/EEA air pollutant emission inventory guidebook 2019: Technical guidance to prepare national emission inventories*. Luxembourg: Publications Office of the European Union. Available at <https://www.eea.europa.eu/publications/emep-eea-guidebook-2019>.

International Standard Industrial Classification of All Economic Activities (ISIC), revision 3.1. UN, New York, 2002. Available at https://unstats.un.org/unsd/publication/SeriesM/seriesm_4rev3_1e.pdf.

¹ Reproduced as received from the Party.