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Report on the technical expert review of the first biennial transparency report of Austria*

Addendum

Summary

This addendum to the report on the technical expert review of the first biennial transparency report of Austria, conducted by a technical expert review team in accordance with the modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement, contains the results of the review of the consistency of the information submitted by the Party with those modalities, procedures and guidelines,. The review took place from 8 to 12 September 2025 in Vienna.

* In the symbol for this document, 2024 refers to the year in which the biennial transparency report was submitted, not to the year of publication.



Abbreviations and acronyms

2006 IPCC Guidelines	<i>2006 IPCC Guidelines for National Greenhouse Gas Inventories</i>
AD	activity data
AR	Assessment Report of the Intergovernmental Panel on Climate Change
BTR	biennial transparency report
C	confidential
C ₃ F ₈	octafluoropropane
CH ₄	methane
CO ₂	carbon dioxide
CRT	common reporting table
CTCN	Climate Technology Centre and Network
CTF	common tabular 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
EU	European Union
EU ETS	European Union Emissions Trading System
GHG	greenhouse gas
GWP	global warming potential
HFC	hydrofluorocarbon
IE	included elsewhere
IEF	implied emission factor
IPCC	Intergovernmental Panel on Climate Change
LULUCF	land use, land-use change and forestry
MPGs	modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement
MSW	municipal solid waste
N ₂ O	nitrous oxide
NA	not applicable
NCV	net calorific value
NDC	nationally determined contribution
NID	national inventory document
NO	not occurring
NO _x	nitrogen oxides
PCC	precipitated calcium carbonate
PFC	perfluorocarbon
QC	quality control
SF ₆	sulfur hexafluoride
TEC	Technology Executive Committee
TERT	technical expert review team

Areas of improvement¹ identified during the technical expert review of the Party's first biennial transparency report

Tables 1–20 present the results of the review of the consistency with the MPGs² of the information submitted by Austria in its BTR1. All recommendations and encouragements contained in the tables are for the next BTR or national inventory report, unless otherwise specified.

A. General reporting provisions

Table 1

Areas of improvement relating to general reporting provisions

ID#	Reporting requirement	Description of area of improvement with recommendation or encouragement
NA	NA	No areas of improvement identified

B. Greenhouse gas emissions and removals

Table 2

Areas of improvement relating to general findings on greenhouse gas emissions and removals

ID#	Reporting requirement	Description of area of improvement with recommendation or encouragement
2.G.1	Specified in paragraphs 29 and 44 of the MPGs CRTs	Austria provided quantitative estimates of the uncertainty of its emission and removal estimates for all source and sink categories, including inventory totals, for the starting year (1990) and the latest reporting year (2022) of the inventory time series. However, the TERT noted that, as reported in the NID (uncertainty assessment is covered on pp.47–58 of the main body and in annex 2 (pp.38–58 of the annexes)), the level of category disaggregation used for the uncertainty analysis performed using approach 1 is different to that used for the key category analysis, for which approach 2 was used where uncertainty for source and sink categories is also provided. For example, in table A 9 in annex 1 to the NID, the disaggregation for stationary combustion for the key category analysis is at the subcategory level (i.e. subcategories 1.A.1.a public electricity and heat production – gaseous fuels, 1.A.2.g other manufacturing industries and construction – gaseous fuels and 1.A.4.b residential – biomass), with specific uncertainty estimates provided; whereas, for the uncertainty analysis, stationary combustion was treated at the category level without further disaggregation. During the review, the Party acknowledged this issue and clarified that it has been resolved in the 2025 NID, with the category stationary combustion being disaggregated to the same level for the uncertainty analysis as for the key category analysis, as shown in annex 2 to the 2025 NID, which was subject to a simplified review by the secretariat. The TERT recommends that the Party ensure that the category disaggregation level used for the uncertainty analysis is consistent with that used in approach 2 for the key category analysis.
2.G.2	Specified in paragraphs 29 and 44 of the MPGs Uncertainty analysis	Austria provided estimates of trend uncertainty for its emission and removal estimates for all source and sink categories, including inventory totals, between the starting year (1990) and the latest reporting year (2022) of the inventory time series using approach 1, as reported in the NID (uncertainty assessment is covered on pp.47–58 of the main body and in annex 2 (pp.38–58 of the annexes)). However, the TERT noted that the values for trend uncertainty provided in the NID are not consistent. Specifically, the trend uncertainty between 1990 and 2022 excluding LULUCF is reported as 2.15 per cent in table 10 (p.50); however, a different value (1.90 per cent) is reported in table 11. Similarly, the trend uncertainty between 1990 and 2022 including LULUCF is reported as 2.96 per cent in table 12 and 2.5 per cent

¹ As referred to in paras. 7, 8, 146(d) and 162(d) of the MPGs, contained in the annex to decision 18/CMA.1.

² Decision 18/CMA.1, annex.

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with recommendation or encouragement</i>
		in table 13. As the uncertainty values provided in tables 10-13 are for the same fixed period (1990–2022), the values should be the same. During the review, the Party explained that the uncertainties of AD for the starting year (1990) and the latest reporting year (2022) vary for some categories, leading to different trend uncertainties being reported in the NID in tables 10 and 11, and tables 12 and 13. For example, the uncertainty of the AD for stationary combustion of gaseous fuels is 2 per cent for 1990 but 1 per cent for 2022. The TERT recommends that the Party explain the variation in the trend uncertainty estimates reported in the NID.

Table 3

Areas of improvement of the reporting on greenhouse gas emissions and removals – energy sector

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with recommendation or encouragement</i>
3.E.1	Specified in paragraph 35 of the MPGs 1. General (energy sector)	Category-specific QC procedures were reported by the Party in the NID for the energy industry (p.106), stationary sources under category 1.A.2 manufacturing industries and construction (pp.123–124) and mobile sources (p.130 for civil aviation, p.144 for road transport and p.149 for navigation), but no category-specific QC procedures were reported for category 1.A.4 other sectors, under which CO₂ emissions from liquid fuels (subcategories 1.A.4.a and 1.A.4.b), solid fuels (subcategory 1.A.4.b) and gaseous fuels (subcategories 1.A.4.a and 1.A.4.b), and CH₄ emissions from biomass and solid fuels (subcategory 1.A.4.b) are key sources. During the review, the Party clarified that, in general, the category-specific QC procedures for categories 1.A.4 other sectors and 1.A.5 other cover all checks listed in NID section 1.5.4 (pp.43–44), and that, in order to improve transparency, category-specific QC procedures for categories 1.A.4 and 1.A.5 will be described in the respective sections of the 2026 NID. The TERT encourages the Party to include information on the category-specific QC procedures undertaken for categories 1.A.4 and 1.A.5 in the energy sector chapter of the NID.
3.E.2	Specified in paragraph 26 of the MPGs 1.A.5.b Mobile – CH ₄ , CO ₂ and N ₂ O	The TERT noted that the method used to collect or estimate the AD (for fuel consumption) used to estimate CO₂, CH₄ and N₂O emissions for subcategory 1.A.5.b mobile (military aviation) is not consistent across the time series 1990–2022. Three separate methods were used: for 1990–1998, fuel consumption for military flights was reported once by the Austrian Ministry of Defence; for 1999–2008, the historical number of aircraft was used as a proxy to estimate fuel combustion by assuming constant flight hours; and, for 2009 onward, fuel consumption was interpolated according to the trend for until 2020 (see pp.176–177 of the NID). For until the latest reporting year, the number of aircraft was used as a proxy. The Party reported in the NID (p.533) that military aviation data have not yet been submitted by the Austrian Ministry of Defence and that it is working on an interministerial data exchange to obtain the data. During the review, the Party clarified that for 2021 the calculation of fuel consumption is an interpolation between 2020 and 2022, as no information could be obtained on the number of military aircraft types in 2021. The Party confirmed that it would like to make continuous efforts to collect data on fuel consumption for military aviation from the Austrian Ministry of Defence. The TERT encourages the Party to use a consistent approach to collecting and/or estimating AD for subcategory 1.A.5.b mobile (military aviation) for each year of the reported time series.
3.E.3	Specified in paragraph 39 of the MPGs 1.A Fuel combustion – sectoral approach – CO ₂	The Party reported in its NID (p.101) that estimates of CO₂ emissions from plants with a total boiler capacity of ≥20 MWth were taken from the reports of plant operators under the EU ETS for 2005 onward. The TERT noted that, pursuant to EU regulation 2018/2066, under the EU ETS operators may use the conversion factor of 3.664 t CO₂/t C (see https://eur-lex.europa.eu/eli/reg_impl/2018/2066/oj/eng). The TERT also noted that this is not in accordance with the 2006 IPCC Guidelines (vol. 2, chap. 1, table 1.4, p.1.23), which require the carbon EF to be converted to a CO₂ EF using a factor of 44/12 = 3.667 t CO₂/t C.

ID#	Reporting requirement	Description of area of improvement with recommendation or encouragement
		During the review, the Party clarified that the difference between the values 3.664 (used under the EU ETS) and 3.667 (required by the IPCC) is caused by the rounding of the value for the atomic weight of carbon and oxygen under the EU ETS by two decimal places (i.e. carbon is 12.01 and oxygen is 16.00, and the conversion factor for carbon to CO₂ is $(12.01 + 2 \times 16.00) / 12.01 = 44.01/12.01 = 3.664$), whereas the IPCC uses integers (i.e. 12 for carbon and 16 for oxygen), leading to the EF of $44/12 = 3.667$. The TERT recommends that the Party provide the rationale for using 3.664, rather than 3.667, as the parameter for converting carbon to CO₂ by explaining the choice of rounding the atomic weight of carbon and oxygen by two decimal places.
3.E.4	Specified in paragraph 47 of the MPGs 1.B.2 Oil, natural gas and other emissions from energy production – CH ₄	The Party reported CH₄ emissions from oil exploration (subcategory 1.B.2.a.i) and natural gas exploration (subcategory 1.B.2.b.i) together under natural gas production and gathering (subcategory 1.B.2.b.ii) and stated in the NID (p.533) that it needed more time to separate the AD. During the review, the Party acknowledged this issue and confirmed that CH₄ emissions from oil and natural gas systems were reported at a more disaggregated level by separating the AD for oil and natural gas production in the 2025 NID (table 345, p.646), which was submitted on 15 April 2025 and subject to a simplified review by the secretariat. The TERT recommends that the Party report CH₄ emissions from oil and gas exploration and production at the most disaggregated level in accordance with the IPCC guidelines by reporting the emissions under subcategories 1.B.2.a.i, 1.B.2.b.i and 1.B.2.b.ii separately.
3.E.5	Specified in paragraph 39 of the MPGs 1.A.1.a Public electricity and heat production – CO ₂	The Party reported in the NID (p.78) that, based on a country-specific study, the calculated CO₂ EF for MSW is 48.88 t/TJ, which was applied for 1990–2004; for 2005 onward, an updated MSW CO₂ EF of 43.45 t CO₂/TJ was applied. This information is also included in NID table 35 (p.102). However, using the quantitative information provided on page 97 of the NID (i.e. overall carbon content of MSW in terms of kg C/t MSW and NCV of MSW), the TERT calculated that for 1990–2004 the CO₂ EF for MSW (including both biomass CO₂ and non-biomass CO₂) should be 108.63 t CO₂/TJ, not 48.88 t CO₂/TJ. During the review, the Party acknowledged this calculation and clarified that the CO₂ EF for MSW used for 1990–2004 (i.e. 48.88 t/TJ) refers to the non-biomass CO₂ emissions based on the overall MSW, including both biomass and non-biomass fraction, as does the EF used for 2005 onward. The Party also acknowledged that the information in the NID (table 35) is not fully transparent. The TERT recommends that the Party report the CO₂ EF for MSW for biomass fraction, non-biomass fraction and overall in the NID (i.e. report the CO₂ EF for MSW for the non-biomass fraction, the emissions for which would be included in the national total; the CO₂ EF for MSW for the biomass fraction, the emissions for which would not be included in the national total; and the CO₂ EF for MSW overall for reference).
3.E.6	Specified in paragraphs 24 and 39 of the MPGs 1.A.3 Transport – CO ₂	The Party used a uniform country-specific carbon content (i.e. 3.15 kg CO₂/kg fuel, which corresponds to a carbon content of 85.9 per cent) for different liquid fuels; for example, diesel and gasoline used in road transport (see NID p.139), kerosene used for aviation (see NID table 64, p.129) and aviation gasoline (for 1990–2015, see NID table 65, p.129). The TERT noted that this does not correspond to the definition of liquid fuels in the 2006 IPCC Guidelines (vol. 2, chap.1, table 1.1), since the distilled products (gasoline, kerosene, diesel, etc.) from crude oil refinery have a different element composition theoretically at the different stages of the refining process. For example, calculated using the default NCV and CO₂ EF for gasoline and diesel from the 2006 IPCC Guidelines (44.3 TJ/Gg and 18.9 kg C/GJ for gasoline and 43.0 TJ/Gg and 20.2 kg carbon/GJ for diesel), the carbon content of these two fuels is 83.7 and 86.9 per cent respectively. During the review, the Party provided a supporting document for jet kerosene, for which the data are originally from the <i>EMEP/EEA air pollutant emission inventory guidebook 2016</i> and the updated <i>EMEP/EEA air pollutant emission inventory guidebook 2023</i>, indicated that the data used for aviation gasoline for up until 2015 (see also ID# 3.E.8 below) are from a study commissioned by Environment Agency

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with recommendation or encouragement</i>
		Austria in 2002 and provided the working report, though it is not publicly available. For gasoline and diesel used in road transport, the default EFs are set as 86 per cent in the network emission model, which is used to calculate CO₂ emissions from transport on the basis of the physical quantity of fuel. The Party clarified that there is no national analysis available of the element composition for these fuels, and that the NCV for gasoline provided by the petroleum company is relatively low, so the high carbon content applied will not trigger overestimation of emissions. The TERT recommends that the Party provide transparent information in the NID on the sources of the data on carbon content of gasoline, kerosene and diesel. The TERT encourages the Party to propose plans to develop country-specific parameters (NCV and carbon content) for these liquid fuels based on on-site measurements.
3.E.7	Specified in paragraph 36 of the MPGs Fuel combustion – reference approach – CO ₂	In CRT 1.A(b) for 2022, the carbon EFs for gasoline, diesel and kerosene based on calorific value are 18.9, 20.2 and 19.5 t carbon/TJ respectively, which are default values from the 2006 IPCC Guidelines (vol. 2, chap.1, table 1.3). However, the NCVs for these fuels are country specific, as shown in the NID (table A 69, p.101). The TERT noted that the Party did not give this discrepancy as one of the reasons why there is a difference between the estimates calculated using the reference and the sectoral approach. During the review, the Party acknowledged this discrepancy in CRT 1.A(b), where a country-specific NCV for liquid fuels but the default carbon EFs for these fuels from the 2006 IPCC Guidelines were reported, and noted that it will address the issue for the 2026 inventory submission. The TERT encourages the Party to use both country-specific NCVs and country-specific carbon EFs for liquid fuels for estimating emissions from fuel combustion in the reference approach.
3.E.8	Specified in paragraph 39 of the MPGs 1.A.3.a Domestic aviation – CO ₂	The Party reported in the NID (table 65, p.129) that the CO₂ EF used for flights under visual flight rules (all flights using aviation gasoline) is 70,000 kg/TJ for 2016–2022, which is the default from the 2006 IPCC Guidelines (vol. 2, chap.1, table 1.1); however, this is different to the IEFs shown in CRT 1.A(a)s3, which fall in the range of 74.22–75.29 t CO₂/TJ for 2016–2022. During the review, the Party showed the TERT the calculation of CO₂ emissions from aviation gasoline and explained that, since the country-specific NCV for aviation gasoline from Statistics Austria comes after the inventory development timeline, the default NCV (44.3 GJ/kg) and CO₂ EF (70,000 kg/TJ) have to be used initially and reported in the NID. Before finalizing the annual inventory, the aviation gasoline consumption in TJ was officially provided by Statistics Austria as the final AD, thus resulting in a different CO₂ IEF to the default value, but the CO₂ emission estimate was not revised to avoid underestimation since the NCV provided by the petroleum company for gasoline is relatively low (see also ID# 3.E.6 above). The TERT recommends that the Party provide a description, including assumptions and sources of data used, of the estimation of CO₂ emissions from aviation gasoline.

Table 4

Areas of improvement of the reporting on greenhouse gas emissions and removals – industrial processes and product use sector

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with recommendation or encouragement</i>
4.I.1	Specified in paragraph 43 of the MPGs 2.A.2 Lime production – CO ₂	The Party reported in its NID (section 4.1.5, p.208) that a recalculation in comparison to the 2023 submission under the Convention occurred for category 2.A.2 lime production for three processes in pulp and paper production reported under the EU ETS related to limestone production or lime use and PCC production respectively (difference resulting from the recalculation for 2021: – 9.41 kt CO₂). The TERT noted that no further explanatory information (e.g. the type of processes and/or why these emissions were not previously incorporated from the EU ETS reporting) was provided in the NID or the CRTs. During the review, Austria provided additional information and clarification on the recalculations made for these three processes in pulp and paper production based on

ID#	Reporting requirement	Description of area of improvement with recommendation or encouragement
4.I.2	Specified in paragraph 40 of the MPGs 2.C.5 Lead production – CO ₂	information reported under the EU ETS. The Party explained that the plant operators had changed their reporting following changes under the EU ETS to accounting for CO₂ recovery during PCC production, and that it first investigated why different plants in the same sector were reporting such differing levels of emissions and removals and whether emissions or removals were not considered or included elsewhere previously in the inventory. The Party found that lime was used for different applications (e.g. PCC as an additive in paper or lime/limestone for water purification) and that some plants have their own lime kiln to produce lime from limestone, some buy lime and produce PCC in the process, while others buy PCC. From the results of the investigation, Austria made assumptions for enabling a consistent time series, which was reflected in the recalculation. The TERT recommends that the Party explain in more detail in the NID methodological improvements made for category 2.A.2. The Party reported in its NID (section 4.4.5.1, p.247) that primary lead production existed in Austria until 1993, but that the associated emissions are reported under the energy sector, as the use of coke as a reducing agent could not be disaggregated from the energetic use of coke in the energy balance. In the NID (section 4.4.5.2, table 145), AD and emissions for secondary lead production are shown for 1990 onward. However, in CRT 2(I).A-H, for 1990–1993, AD and IEFs are reported as “NA”, while the emission estimates correspond with those reported in NID table 145. During the review, the Party clarified that this issue is likely due to a minor technical issue in its database as two categories were merged into one, but that the emissions were reported correctly. The Party indicated that it will try to fix the problem and include the AD and IEFs for secondary lead production for 1990–1993 in the next inventory submission. The TERT recommends that the Party report complete AD and IEFs for CO₂ emissions for category 2.C.5 for 1990–1993.
4.I.3	Specified in paragraph 31 of the MPGs 2.D.2 Paraffin wax use – CO ₂	The Party reported in CRT 2(I).A-H AD and CO₂ IEFs for category 2.D.2 paraffin wax use as “C” for 2022. The TERT noted that AD and IEFs were reported for all previous years and no particular reason was provided in the NID (section 4.5.2.2, p.250) for the confidentiality of these data for 2022 and the introduction of the use of “C”. During the review, the Party explained that it obtains production data from Statistics Austria and that these data became confidential in 2022 as they are coming from an increasingly smaller number of production facilities. To increase transparency, the TERT recommends that the Party explain in the NID the reason for the confidentiality of the data for category 2.D.2 and the reporting of “C” for 2022 onward.
4.I.4	Specified in paragraph 47 of the MPGs 2.D.3 Other (non-energy products from fuels and solvent use) – CO ₂	The Party reported in its NID (section 4.5.2.4, p.251) the approach used to estimate emissions from urea used as a catalyst (subcategory 2.D.3.d) in transportation on the basis of the use of the additive AdBlue. The TERT noted that urea may also be used for other purposes such as NO_x abatement in power plants and, if applicable, should be included under category 2.D.3 (in accordance with note 10 to CRT 2(I).A-H). During the review, the Party explained that for 2013–2018 small amounts of CO₂ emissions resulting from urea used for NO_x abatement were reported under the EU ETS for some industrial sites. However, these figures were not used for the inventory because they were not considered complete and the inventory methodology follows a different approach. The Party clarified that CO₂ emissions from urea use other than in fertilizer and AdBlue are included in the reported emissions from ammonia production, which include emissions from use of urea in NO_x abatement. Urea is produced in Austria as a downstream process of ammonia production at one site, which is covered by the EU ETS. The Party explained that, in line with the EU ETS regulation, all CO₂ produced in the process (including amounts of carbon that are used for urea production in downstream processes) is reported by the site producing ammonia, which is also producing the CO₂ in an upstream process. According to this approach, CO₂ emissions from urea used for NO_x abatement are not accounted for in installations where it is used, as this would

ID#	Reporting requirement	Description of area of improvement with recommendation or encouragement
4.I.5	Specified in paragraphs 39–40 of the MPGs 2.F.1 Refrigeration and air conditioning – HFCs	result in double counting of emissions. The Austrian inventory methodology follows this approach to cover all emissions and avoid double counting. The TERT noted that the described approach, where CO₂ emissions from urea use are not accounted for at the installations where it is used and are instead reported for the ammonia production site, is not fully consistent with the 2006 IPCC Guidelines. Although this may be a relatively minor source of emissions, it could potentially result in their overestimation or underestimation depending on the level of imports and exports of urea. Noting that the 2006 IPCC Guidelines state that CO₂ emissions from urea use should be accounted for in the corresponding sectors (vol. 3, chap.3, p.3.16, box 3.2), emissions from potential imported urea may not be accounted for at the production site by the country of origin, whereas the potential export of urea may similarly lead to an overestimation of emissions in the Austrian inventory. Following a request from the TERT, the Party obtained (confidential) data on the import and export of urea. According to the Party, the net import or export is dynamic (with some years showing a net export, followed by years with a net import) but is on average around 10 per cent of total urea production. The potential impact on CO₂ emissions is 15 kt CO₂ on average, which the Party noted as being below the threshold of significance of 36 kt CO₂. The TERT noted that the threshold of significance is only of relevance if the emissions for an entire category are considered insignificant. The TERT recommends that the Party improve the estimation of emissions from urea use reported under category 2.D.3, taking into account CO₂ emissions and sequestration from urea production and, in particular, the impact of the import and export of urea, by collecting additional AD (e.g. on specific use of urea and urea imports and exports through consultation with industry and/or statistical agencies) and developing an appropriate methodological approach in order to improve the accuracy and comparability of the associated emission estimates. The Party reported in its NID (section 4.7.2.1, pp.262–265) the applied EF for disposal emissions for the various subcategories of category 2.F.1 refrigeration and air conditioning, which is based on a study by Leisewitz and Schwarz (2010), and in most cases an EF for disposal of 30 per cent was indicated (e.g. for domestic refrigeration, transport refrigeration and mobile air conditioning). However, in CRT 2(II).B-H, for all subcategories and gases a disposal loss factor of 100 per cent was reported, with the exception of 30 per cent for subcategory 2.F.1.a commercial refrigeration for HFC-23. During the review, the Party clarified that it was aware of the inconsistency and that the reported amounts left in products at decommissioning and emissions from disposal in the NID (section 4.7.2.1) are correct. However, it explained that the CRT reporting tool automatically calculates the IEF as 100 per cent and that it was unable to manually correct it using the tool. The TERT recommends that the Party report the correct disposal loss factors in CRT 2(II).B-H, if possible, in line with the applied EF for disposal emissions for the subcategories under category 2.F.1 as reported in the NID (section 4.7.2.1), or, if that is not possible owing to persistent technical issues with the reporting tool, include a brief explanation in the NID or CRT documentation box indicating the reason for the apparent inconsistency between the information in the NID and the relevant CRT.
4.I.6	Specified in paragraph 37 of the MPGs 2.G Other product manufacture and use – N ₂ O, HFCs and SF ₆	The Party reported emissions for category 2.G other product manufacture and use in NID table 154 (section 4.8.1, p.272). In that table, under subcategory 2.G.1, the GWP value for SF₆ is reported as 23,500, which is in accordance with the GWP values from the AR5. However, under subcategory 2.G.2, the GWP value for SF₆ is shown as 22,800 (the GWP value from the AR4); for C₃F₈ it is shown as 8,830 (also the AR4 GWP value, rather than the AR5 GWP value of 8,900); and under subcategory 2.G.3, the GWP value for N₂O is shown as 298 (the AR4 GWP value, instead of the AR5 GWP value of 265). The TERT noted that the Party should use the GWP values from the AR5. During the review, the Party acknowledged that some of the GWP values in the heading row of NID table 154 are incorrectly shown as AR4 GWP values, but confirmed that only the GWP values from the AR5 were used in the actual calculation for all gases and subcategories. The Party indicated that it will correct

ID#	Reporting requirement	Description of area of improvement with recommendation or encouragement
		the table headings for subcategories 2.G.2 (SF ₆ and C ₃ F ₈) and 2.G.3 (N ₂ O) in the next inventory submission. The TERT recommends that the Party consistently reference the GWP values from the AR5 throughout the NID.
4.I.7	Specified in paragraph 31 of the MPGs 2.G.2 SF ₆ and PFCs from other product use – HFCs and SF ₆	The Party reported in its NID (section 4.8.2.2, p. 274) on emissions associated with adiabatic uses of SF ₆ and C ₃ F ₈ in car tyres and shoes (with relevant emissions reported for until 2006 and 2008 respectively). However, in CRT 2(II).B-H, the cells for subcategory 2.G.2.d adiabatic properties: shoes and tyres – SF ₆ are left blank, and it appears that these emissions are instead reported under subcategory 2.G.2.e.ii other – research and other use. Considering the Party's combined reporting of SF ₆ and C ₃ F ₈ , the TERT noted that only SF ₆ can be reported under subcategory 2.G.2.d, while both SF ₆ and C ₃ F ₈ can be reported under subcategory 2.G.2.e.ii. During the review, the Party confirmed that emissions associated with adiabatic uses of SF ₆ and C ₃ F ₈ in car tyres and shoes are reported under subcategory 2.G.2.e.ii. It explained that in previous inventories all of these emissions were reported together under category 2.F.9, which no longer exists in newer versions of the reporting tables, and that the category emissions have subsequently been reallocated as a total to subcategory 2.G.2.e.ii. As these uses were only relevant until 2005, the Party indicated that disaggregating the data was not prioritized. The TERT recommends that the Party either report emissions associated with adiabatic uses of SF ₆ in car tyres and shoes under subcategory 2.G.2.d in the CRTs, or, if that is not practicable because C ₃ F ₈ cannot be reported under subcategory 2.G.2.d in the CRTs, use "IE" for subcategory 2.G.2.d and indicate why the emissions are reported elsewhere under subcategory 2.G.2.e.ii.

Table 5

Areas of improvement of the reporting on greenhouse gas emissions and removals – agriculture sector

ID#	Reporting requirement	Description of area of improvement with recommendation or encouragement
5.A.1	Specified in paragraph 35 of the MPGs 3.B Manure management – CH ₄	The Party reported CH ₄ emissions for category 3.B manure management in its NID (p.317) and CRT 3.B(a) using equation 10.23 from the 2006 IPCC Guidelines. The TERT noted that the unit of the EFs for VS _(T) (daily volatile solids excreted for livestock category T) in the NID was kg dry matter/animal/year, which is not in line with the unit of VS _(T) in the 2006 IPCC Guidelines (i.e. kg dry matter/animal/day), and that this could lead to an underestimation of emissions. During the review, the Party clarified that this was a typing error in the NID, but the emissions were reported correctly and the error will be corrected in the next inventory submission. The TERT encourages the Party to correct the typing error in its next submission as intended.

Table 6

Areas of improvement of the reporting on greenhouse gas emissions and removals – land use, land-use change and forestry sector

ID#	Reporting requirement	Description of area of improvement with recommendation or encouragement
6.L.1	Specified in paragraph 22 of the MPGs 4.A.2.5 Other land converted to forest land – CO ₂	The Party reported in its NID (section 6.1.3.1) that, for annual land-transition matrices, annual areas of forest land, cropland, grassland, wetlands, and settlements are identified, other land is quantified as the difference between the total area of the Austrian territory and the total estimated area of the five land use categories during the final steps in the LULUCF Data Integration. According to the 2006 IPCC Guidelines (Vol 4, ch.3), other land includes bare soil, rock, ice, and all land areas that do not fall into any of the other five categories. Other land is often unmanaged (2006 IPCC Guidelines, Vol 4, ch.9). The Party reported in its NID (section 6.7.3) that the other land category for Austria covers rocks and screes, glaciers and unmanaged alpine dwarf shrub heaths. Furthermore, the Party reported total areas and land-use change areas of forest land (for 1990–2022) in kha in NID table 235.

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with recommendation or encouragement</i>
		The TERT noted that, according to the information reported in NID table 235, other land converted to forest land is the second largest land-use category after grassland converted to forest land under land converted to forest land for the time series 1990–2022; for example, for 2022 land converted to forest land was reported at 129 kha, with grassland converted to forest land and other land converted to forest land accounting for 58 and 42 kha respectively. It is not clear what processes are causing the conversion of the relatively large areas of other land to forest and which subcategories of other land (rocks, glaciers, etc.) are undergoing these transitions. During the review, the Party explained that the environmental conditions for all land uses are changing with climate change, particularly in mountainous countries like Austria. Austria is observing a shift in the tree line that is increasing in elevation, as the previously too harsh conditions of the upper and peak elevations (glaciers, scree, sparsely vegetated areas) become warmer, creating conditions for tree growth. The Party stated that it is important to note that these land-use changes are systematically tracked under the national forest inventory in field surveys. The Party provided additional information from the most recent national forest inventory (for 2016–2021) as evidence of the conversion of other land to forest land, which includes a list of all national subcategories of other land (dwarf shrub heathland, gravel, rocks, landslides, alpine grass, glaciers and other natural areas) and their potential to contribute to the area of conversion to forest land. The TERT recommends that the Party enhance transparency and explain the observed land use changes from other land to forest land at the NFI plots, e.g., by including information on the respective, country-specific sub-categories of other land undergoing conversion to forest land.
6.L.2	Specified in paragraph 22 of the MPGs 4.E.1 Settlements remaining settlements – CO ₂	The Party reported emissions and removals from living biomass for subcategory 4.E.2 land converted to settlements in its NID (section 6.6.1) but did not estimate emissions and removals for subcategory 4.E.1 settlements remaining settlements. In addition, the Party reported in its NID (section 6.6.4.1.1) that estimates for living biomass in land converted to settlements were revised using the results of a study carried out in 2023 to apply the tier 2a method from the 2006 IPCC Guidelines (Vol 4, chap.4., equation 8.2). In the study, the share of the crown cover of different vegetation classes was estimated for the settlements area in Austria using the national remote sensing data set “Lisa light 2022” (BEV, 2023b). For settlements remaining settlements, the Party reported “NA” in CRT 4.E for carbon stock change in living biomass in 2022. It was not clear to the TERT why the same methodology and study were not used for the estimations for settlements remaining settlements. During the review, the Party explained that “NA” was reported for carbon stock change in living biomass in settlements remaining settlements because, from the results of the study in 2023 for which the comparison of the crown cover changes was performed for two years only, it was concluded that a longer time period is needed to identify real crown cover changes and to obtain a robust time series. The TERT recommends that the Party provide the reason why the same national methodology and the results of the relevant national study to estimate biomass carbon stock changes were not used for remaining settlements and land converted to settlements.

Table 7

Areas of improvement of the reporting on greenhouse gas emissions and removals – waste sector

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with recommendation or encouragement</i>
7.W.1	Specified in paragraph 39 of the MPGs 5.D.1 Domestic wastewater – CH ₄	The Party reported in CRT 5.D for subcategory 5.D.1 domestic wastewater “IE” for the amount of CH₄ for energy recovery. The TERT noted that this is not in accordance with the 2006 IPCC Guidelines (vol. 1, chap. 8) because, while the Party reported “IE” and indicated in CRT 9 that the same recovered CH₄ is reported under the energy sector, the same quantitative amount could not be traced under the energy sector. During the review, the Party indicated that it does not have AD to calculate how much CH₄ is recovered, although it agreed that the activity occurs and CH₄ is recovered. The TERT recommends that, if reporting CH₄ for energy recovery as “IE” and including the emissions under the amount of CH₄ for energy recovery, the Party

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with recommendation or encouragement</i>
		provide the assumptions and sources used for determining how much CH ₄ has been recovered in order to improve transparency.
7.W.2	Specified in paragraph 47 of the MPGs 5.C.2 Open burning of waste – CO ₂	The Party reported in CRT 5.C, CO ₂ emissions for subcategory 5.C.2.a biogenic as “NA” and “NO”, whereas AD are provided. The TERT noted that this is not in accordance with paragraph 47 of the MPGs because the Party reported “NA” when there are available emission estimates for CO ₂ . During the review, the Party indicated that the “NA” reported for CO ₂ emissions for subcategory 5.C.2.a.ii biogenic – vine is a mistake, as estimates of the CO ₂ emissions are available and will be included in the next inventory submission. The TERT recommends that the Party report estimates of CO ₂ emissions for subcategory 5.C.2.a.ii biogenic instead of “NA”.

C. Information necessary to track progress in implementing and achieving the nationally determined contribution under Article 4 of the Paris Agreement

Table 8

Areas of improvement of the reporting on national circumstances and institutional arrangements

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with recommendation or encouragement</i>
NA	NA	No areas of improvement identified

Table 9

Areas of improvement of the description of the nationally determined contribution under Article 4 of the Paris Agreement, including updates

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with recommendation or encouragement</i>
NA	NA	No areas of improvement identified

Table 10

Areas of improvement of the reporting of the information necessary to track progress in implementing and achieving the nationally determined contribution under Article 4 of the Paris Agreement

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with recommendation or encouragement</i>
NA	NA	No areas of improvement identified

Table 11

Areas of improvement of the reporting on mitigation policies and measures, actions and plans, including those with mitigation co-benefits resulting from adaptation actions and economic diversification plans, related to implementing and achieving the nationally determined contribution under Article 4 of the Paris Agreement

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with recommendation or encouragement</i>
11.1	Specified in paragraph 83 of the MPGs	Austria did not report quantitative estimates of costs or non-GHG mitigation benefits for individual policies and measures. The Party provided a qualitative discussion of challenges in quantifying implementation costs and non-GHG mitigation benefits and described policy interactions mostly in narrative format in its BTR1. Austria indicated the challenges currently limiting the quantitative estimation of costs and non-GHG benefits for key policies and measures. While some qualitative information on synergies and trade-offs among mitigation policies and measures was provided in the BTR1, specific examples of these interactions were not fully quantified or systematically assessed. During the review, Austria explained that a single policy may be implemented by different institutions at different levels of administration with a focus on different policy targets, and there is no systematic collection of relevant information from different offices for reporting purposes.

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with recommendation or encouragement</i>
		The TERT acknowledges that Austria explained the challenges in providing quantitative estimates of the costs and non-GHG mitigation benefits of individual policies and measures and encourages Austria to continue efforts to improve data availability and, where possible, include quantitative information and a more systematic analysis of how the mitigation actions identified in the BTR interact with each other.
11.2	Specified in paragraph 85 of the MPGs	Austria did not report in CTF table 5 on the achieved GHG emission reductions attributable to individual policies and measures. During the review, Austria explained that a single policy may be implemented by different institutions at different levels of administration with a focus on different policy targets, and there is no systematic collection of relevant information from different offices for reporting purposes. In Austria there are fragmented responsibilities, as policy implementation is split between the federation, federal provinces and municipalities, making harmonized reporting on emission reductions challenging. Furthermore, many policies target not only GHG mitigation but also other objectives involve different priorities and require different kinds of expertise, which complicates common cost–benefit accounting. Austria further explained that a systematic analysis of synergies and trade-offs among mitigation policies is not available, although some interactions are known. The TERT recommends that Austria report, to the extent possible, information on results achieved, including ex post GHG emission reductions attributable to individual policies and measures, in CTF table 5.
11.3	Specified in paragraph 86 of the MPGs	Austria did not report the methodologies and assumptions used for estimating the expected GHG emission reductions resulting from individual policies and measures. During the review, Austria explained that a single policy may be implemented by different institutions at different levels of administration, and there is currently no nationwide system that allows for a systematic and comprehensive calculation of the effects of individual policies. As stated in the BTR1, responsibilities for policies are split between the federation, provinces and municipalities, making it difficult to impose common GHG reporting rules. Many measures target multiple objectives beyond GHG mitigation, and the responsible actors have different backgrounds and priorities. Introducing a harmonized system would require considerable additional resources at all administrative levels. The planned Austrian Climate Law intends to establish better monitoring of the implementation of policies, but no government decision has been drafted yet. Austria further explained that sectoral experts for the inventory and modelling prepare descriptions of policies and assumptions for modelling, as outlined in section II.F.5 of the BTR1. Austria is aware that links between modelled projections and implemented measures must consider interactions between measures, as simply adding individual impacts would overestimate the total effect. In general, Austria noted that its main barriers to reporting the required information are legal, institutional and resource related. Sectoral modelling is already used to estimate potential impacts of policies and measures, and Austria plans to maintain and refine these links to increase transparency on assumptions and uncertainties. The TERT recommends that Austria report, to the extent possible, the methodologies and assumptions used to estimate the impacts of individual policies and measures in CTF table 5, or, if this is not possible, describe the reasons why and plans to improve such reporting.

Table 12

Areas of improvement of the summary of greenhouse gas emissions and removals

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with recommendation or encouragement</i>
NA	NA	No areas of improvement identified

Table 13

Areas of improvement of the projections of greenhouse gas emissions and removals

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with recommendation or encouragement</i>
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NA	NA	No areas of improvement identified
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Table 14

Areas of improvement of other information relevant to tracking progress in implementing and achieving the nationally determined contribution under Article 4 of the Paris Agreement

ID#	Reporting requirement	Description of area of improvement with recommendation or encouragement
NA	NA	No areas of improvement identified

D. Financial, technology development and transfer, and capacity-building support provided under Articles 9–11 of the Paris Agreement

Table 15

Areas of improvement of the reporting on national circumstances and institutional arrangements

ID#	Reporting requirement	Description of area of improvement with recommendation or encouragement
15.1	Specified in paragraph 120 of the MPGs	Austria did not report information on the institutional arrangements in place for providing technology development and transfer, and capacity-building support. During the review, the Party explained that it provides technology development and transfer, and capacity-building support through a wide range of channels and instruments, ensuring both multilateral and bilateral approaches are used to maximize effectiveness. At the multilateral level, Austria collaborates with international organizations, development banks and climate funds to facilitate technical assistance and training and strengthen institutions in partner countries. Bilateral efforts by Austrian climate finance actors involve tailoring initiatives to the unique needs and circumstances of the partner nations. The TERT recommends that Austria describe its institutional arrangements for providing technology development and transfer, and capacity-building support, even if no single dedicated arrangement exists. This could involve mapping the main actors (e.g. the Austrian Development Agency, relevant ministries, partner organizations and official development assistance projects) and their roles in bilateral and multilateral delivery, which would clarify how Austria organizes its decentralized system in practice.

Table 16

Areas of improvement of the reporting on underlying assumptions, definitions and methodologies relating to financial, technology development and transfer, and capacity-building support provided under Articles 9–11 of the Paris Agreement

ID#	Reporting requirement	Description of area of improvement with recommendation or encouragement
NA	NA	No areas of improvement identified

Table 17

Areas of improvement of the information on financial support provided under Article 9 of the Paris Agreement – bilateral, regional and other channels

ID#	Reporting requirement	Description of area of improvement with recommendation or encouragement
NA	NA	No areas of improvement identified

Table 18

Areas of improvement of the information on financial support provided under Article 9 of the Paris Agreement – multilateral channels

ID#	Reporting requirement	Description of area of improvement with recommendation or encouragement
NA	NA	No areas of improvement identified

Table 19

Areas of improvement of the information on technology development and transfer provided under Article 10 of the Paris Agreement

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with recommendation or encouragement</i>
19.1	Specified in paragraph 126(f) of the MPGs	Austria did not report in its BTR1 information on knowledge generated related to technology development and transfer under Article 10 of the Paris Agreement. In particular, Austria did not report qualitative or quantitative information on the nature of the knowledge generated through the support provided to the TEC and the CTCN. During the review, Austria explained that it has provided financial contributions to the TEC, which supports developing countries through its knowledge products. Austria noted that these publications are presented at UNFCCC events, and that the Austrian national designated entity and Austrian members of CTCN use them and distribute the information to other Austrian stakeholders. The TERT acknowledges Austria's explanation that its financial contributions to the UNFCCC Technology Mechanism are provided as core support to the TEC and the CTCN, which collectively generate and disseminate knowledge products for developing countries. The TERT recommends that Austria report, to the extent possible, qualitative and/or quantitative information on knowledge generated, such as a description of the nature of its contributions and examples of TEC or CTCN outputs generated in the reporting period, while noting that these are the result of collective support, and explain how such outputs are disseminated through its national designated entity and national networks to developing country partners.

Table 20

Areas of improvement of the information on capacity-building support provided under Article 11 of the Paris Agreement

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with recommendation or encouragement</i>
NA	NA	No areas of improvement identified

Annex

Documents and information used during the review

A. Reference documents

BTR1 of Austria. Available at <https://unfccc.int/first-biennial-transparency-reports>.

BTR1 CTF tables of Austria.

Available at <https://unfccc.int/first-biennial-transparency-reports>.

BTR1 of the EU. Available at <https://unfccc.int/first-biennial-transparency-reports>

CRTs of Austria. Available at <https://unfccc.int/first-biennial-transparency-reports>.

Corrigendum to the CTF NDC tables of Austria. Available at <https://unfccc.int/first-biennial-transparency-reports>.

“Guidance for operationalizing the modalities, procedures and guidelines for the enhanced transparency framework referred to in Article 13 of the Paris Agreement”. Decision 5/CMA.3. FCCC/PA/CMA/2021/10/Add.2. Available at <https://unfccc.int/documents/460951>.

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 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/>.

IPCC. 2019. *2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories*. E Buendia, K Tanabe, et al. (eds.). Geneva: IPCC. Available at <https://www.ipcc-nggip.iges.or.jp/public/2019rf/>.

“Modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement”. Annex to decision 18/CMA.1. FCCC/PA/CMA/2018/3/Add.2. Available at <https://unfccc.int/documents/193408>.

Report on the technical expert review of the BTR1 of the EU. Available at <https://unfccc.int/first-biennial-transparency-reports>.

B. Additional information provided by the Party

Responses to questions during the review were received from Austrian experts from the Federal Ministry of Agriculture and Forestry, Climate and Environmental Protection, Regions and Water Management of Austria) and from Umweltbundesamt, including additional material. The following references were provided by Austria and may not conform to UNFCCC editorial style as some have been reproduced as received:

BMK. 2024. Bericht zur internationalen klimafinanzierung – Berichtsjahr 2023.

Leisewitz, A. & Schwarz, W. (2010), *Assessment of the consumption and the real emissions of fluorinated greenhouse gases in Austria 2000-2008*. Frankfurt/M.

Mandfred T, Kalivoda and Monika Kudrna. 2002. *Report on air traffic emissions calculation in Austria 1990-2000: Study report*. Perchtoldsdorf, DN 2001-006-015

EMEP/EEA air pollutant emission inventory guidebook 2016 and the updated EMEP/EEA air pollutant emission inventory guidebook 2023.

BEV. 2023b. “Lisa light 2022”.