ENVIRONMENT AGENCY AUSTRIA

# AUSTRIA'S ANNUAL GREENHOUSE GAS INVENTORY 1990-2024

Submission under Regulation (EU) No 2018/1999

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REPORT

REP-1016

VIENNA 2026

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The accreditation scope of the IBE is listed on: akkreditierung-austria.gv.at/overview. The specific underlying standards for the results presented in this report are outlined in Chapter 4.3 of this report.

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# CONTENTS

# VORWORT

### Dieser Bericht

Der vorliegende Bericht präsentiert die neuesten Daten der Emissionen von Treibhausgasen (THG) Österreichs. Diese Daten betreffen die Emissionen des Jahres 2024 sowie die aktualisierte Zeitreihe der Jahre 1990 bis 2023. Damit liefert der Bericht Emissionsdaten für das vierte Jahr der Zielperiode 2021-2030 unter der Effort-Sharing-Verordnung (ESR, 2018/842/EU, i.d.F. 2023/857/EU[1]).

Der Bericht wird in Erfüllung der Governance Regulation (EU) 2018/1999[2] erstellt, welche in Artikel 26 („Annual Reporting") sowie in ihrer Durchführungsverordnung (EU) 2020/1208[3] die Anforderungen an Inhalt und Format festlegt. Neben den neuen THG-Emissionsdaten im Format der „Common Reporting Tables" (CRT) sowie des dazugehörigen Berichts werden zur Erfüllung der Berichtspflicht zusätzliche Informationselemente übermittelt, u.a. zur Umsetzung von Empfehlungen aus den Reviews, Unsicherheiten, Indikatoren und Konsistenzchecks. Die Umsetzung der Berichtsanforderungen wird gemäß Artikel 8 (2) bzw. Annex VII der Durchführungsverordnung[3] in Chapter 5 dargestellt.

Eine detaillierte Darstellung der Daten im Format der Common Reporting Tables (CRT) wird der Europäischen Kommission in digitaler Form übermittelt. Die Berichtsanhänge gemäß Durchführungsverordnung[3] sind nicht direkter Bestandteil des vorliegenden Berichts, sondern werden der Europäischen Kommission ebenfalls separat in elektronischer Form übermittelt (EIONET/CDR).

### Rechtlicher Hintergrund

Als Vertragsstaat der Klimarahmenkonvention (*Rahmenübereinkommen der Vereinten Nationen über Klimaänderungen* (UN Framework Convention on Climate Change – UNFCCC,

[1] VERORDNUNG (EU) 2023/857 DES EUROPÄISCHEN PARLAMENTS UND DES RATES vom 19. April 2023 zur Änderung der Verordnung (EU) 2018/842 zur Festlegung verbindlicher nationaler Jahresziele für die Reduzierung der Treibhausgasemissionen im Zeitraum 2021 bis 2030 als Beitrag zu Klimaschutzmaßnahmen zwecks Erfüllung der Verpflichtungen aus dem Übereinkommen von Paris sowie zur Änderung der Verordnung (EU) 2018/1999.

[2] VERORDNUNG (EU) 2018/1999 DES EUROPÄISCHEN PARLAMENTS UND DES RATES vom 11. Dezember 2018 über das Governance-System für die Energieunion und für den Klimaschutz, zur Änderung der Verordnungen (EG) Nr. 663/2009 und (EG) Nr. 715/2009 des Europäischen Parlaments und des Rates, der Richtlinien 94/22/EG, 98/70/EG, 2009/31/EG, 2009/73,/EG, 2010/31/EU, 2012/27/EU und 2013/30/EU des Europäischen Parlaments und des Rates, der Richtlinien 2009/119/EG und (EU) 2015/652 des Rates und zur Aufhebung der Verordnung (EU) Nr. 525/2013 des Europäischen Parlaments und des Rates.

[3] DURCHFÜHRUNGSVERORDNUNG (EU) 2020/1208 DER KOMMISSION vom 7. August 2020 über die Struktur, das Format, die Verfahren für die Vorlage und die Überprüfung der von den Mitgliedstaaten gemäß der Verordnung (EU) 2018/1999 des Europäischen Parlaments und des Rates gemeldeten Informationen und zur Aufhebung der Durchführungsverordnung (EU) Nr. 749/2014 der Kommission.

BGBl. Nr. 414/1994[4]) ist Österreich verpflichtet, jährlich seine Emissionen und Senken bezüglich der direkten Treibhausgase $CO_2$, $CH_4$, $N_2O$, HFC, PFC, $SF_6$ und $NF_3$, sowie der indirekten Treibhausgase $NO_x$, NMVOC, CO und $SO_2$ zu erheben und zu berichten. Die dafür anzuwendende Methodik ist in einem umfassenden Regelwerk entsprechend den Beschlüssen der Vertragsstaatenkonferenz der UNFCCC festgelegt.

Seit 2024 erfolgt die Berichterstattung unter dem Pariser Abkommen im Rahmen des ‚Enhanced Transparency Framework' (ETF). Dabei sind NID und CRT „eigenständige" Teile des Biennial Transparency Reports (BTR), welcher den Fortschritt bei den Klimazielen (NDC - Nationally Determined Contributions) zeigt, und eine Vielzahl an Berichtselementen beinhaltet, u.a. zu Klimaschutz- und Anpassungsmaßnahmen in Österreich sowie Unterstützungsleistungen für Drittländer. Während der BTR nur alle 2 Jahre fällig ist (zuletzt 2024[5]), erfolgt die Erstellung und Übermittlung der nationalen THG-Inventur and die UNFCCC jährlich.

Auch die Europäische Union (EU) ist Vertragsstaat der Klimarahmenkonvention. Die EU Inventur wird aus der Summe der Mitgliedsstaaten-Inventuren errechnet. Deshalb hat die EU mit dem o. g. THG-Überwachungssystem die Anforderungen, die an die EU gestellt werden, an die Mitgliedsstaaten weitergegeben und diese dazu verpflichtet, sämtliche Daten und Informationen, die für die Erstellung der EU Inventur benötigt werden, rechtzeitig zur Verfügung zu stellen. Mit dem vorliegenden Bericht kommt Österreich dieser Berichtspflicht nach.

Die Erhebung der Daten berücksichtigt außerdem die Ergebnisse der jährlichen Überprüfung durch internationale FachexpertInnen im Rahmen der so genannten UNFCCC-Reviews. Eine solche Tiefenprüfung fand zuletzt als In-Country Review von 08.09.-12.09.2025 am Standort des BMLUK statt, und wurde erfolgreich abgeschlossen. Im Enhanced Transparency Framework (ETF) unter dem Übereinkommen von Paris ist vorgesehen, dass die nationalen Inventuren jährlich im Auftrag des Klimasekretariats der UNFCCC durch externe Expert:innen (Technical Expert Review Team) geprüft werden. Die Tiefenprüfungen können als Desk Review, Centralized Review oder In-Country Review durchgeführt werden, wobei letzterer zumindest zwei Mal in zehn Jahren zu erfolgen hat[6]. In Jahren, in denen kein Biennial Transparency Report (BTR) zu übermitteln ist, werden vereinfachte Überprüfungen (Simplified Reviews) durchgeführt.

Auch auf EU-Ebene, im Auftrag der Europäischen Umweltagentur (EEA), wird die österreichische THG-Inventur jährlich überprüft, meist im Rahmen von ‚initial checks'. 2025 fand

[4] BGBl. Nr. 414/1994: Rahmenübereinkommen der Vereinten Nationen über Klimaänderungen samt Anlagen. Änderung durch BGBl. III Nr. 12/1999.
http://www.ris.bka.gv.at/Dokumente/BgblPdf/1994_414_0/1994_414_0.pdf
http://www.ris.bka.gv.at/Dokumente/BgblPdf/1999_12_3/1999_12_3.pdf

[5] https://unfccc.int/sites/default/files/resource/AUT-BTR-2024.pdf

[6] Report of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement on the third part of its first session, held in Katowice from 2 to 15 December 2018 (Decision 18/CMA.1, annex. para. 158)

jedoch eine umfassendere Prüfung gemäß Artikel 38(1) der EU Governance Regulation bzw. Durchführungsverordnung (EU) 2024/1281[7]) statt, welche auf die Jahre 2021, 2022 und 2023 – die für die ESR-Zielwerte für 2026-2030 relevanten Basisjahre – fokussiert war. Teil dieses „comprehensive review 2025" war auch die umfangreiche Prüfung der Bilanzierung der österreichischen Landnutzung, Landnutzungsänderungen und Forstwirtschaft (Sektor LULUCF). Der Review konnte erfolgreich abgeschlossen werden, Empfehlungen daraus sind großteils auf Erhöhung der Transparenz gerichtet.

Tabelle A: Jährlicher Prozess zur Erstellung und Überprüfung der THG Inventur.

| | |
|---|---|
| 15. Jänner *(Jahr n)* | Übermittlung der THG-Inventur an die EK (Short-NID und CRTs für die Jahre 1990 bis zum Jahr n-2) |
| 15. Jänner bis 28. Februar *(Jahr n)* | Überprüfung der Daten (CRT) und des Dokuments zur nationalen Inventur (NID) durch die EEA im Rahmen der ‚initial QA/QC checks'. Ein ‚comprehensive review' gemäß Artikel 38(1) der EU Governance Regulation ist für die Jahre 2025[8], 2027 und 2032 vorgesehen. |
| 15. März *(Jahr n)* | Übermittlung der nationalen THG-Inventur (Dokument zur nationalen Inventur – NID, und CRTs) für die Jahre 1990 bis zum Jahr n-2 an die EK |
| 15. April *(Jahr n)* | Übermittlung der nationalen THG-Inventur (Dokument zur nationalen Inventur – NID, und CRTs) für die Jahre 1990 bis zum Jahr n-2 an die UNFCCC |
| Juni *(Jahr n)* bis März *(Jahr n+1)* | Überprüfung der Daten (CRT) und des NID durch externe Expert:innen im Auftrag des Klimasekretariats (UNFCCC, Technical Expert Review) |

Zur Erfüllung der Anforderungen, die sich aus der Klimarahmenkonvention und vor allem dem Inkrafttreten des Kyoto-Protokolls[9] ergeben haben, wurde ein Nationales System eingerichtet. Ziel war es, die Qualität der Inventur sicherzustellen und kontinuierlich zu verbessern. Dazu wurde ein Gesamtkonzept für das Nationale Inventur System Austria (NISA) entwickelt, das auf der *Österreichischen Luftschadstoff-Inventur* (OLI) als zentralem Kern aufbaut. Ein umfassendes Inventurverbesserungsprogramm und ein Qualitätsmanagementsystem entsprechend ISO/IEC 17020 sind ein wesentlicher Teil des NISA[10].

Der vorliegende Bericht wurde vom Umweltbundesamt auf Grundlage des Umweltkontrollgesetzes BGBl. Nr. 152/1998[11] erstellt. Dem Umweltbundesamt wird in diesem Bundesgesetz in § 6 (2) Z.15 unter anderem die Aufgabe übertragen, fachliche Grundlagen zur

[7] DURCHFÜHRUNGSVERORDNUNG (EU) 2024/1281 DER KOMMISSION vom 7. Mai 2024 zur Änderung der Durchführungsverordnung (EU) 2020/1208 über die Struktur, das Format, die Verfahren für die Vorlage und die Überprüfung der von den Mitgliedstaaten gemäß der Verordnung (EU) 2018/1999 des Europäischen Parlaments und des Rates gemeldeten Informationen

[8] Die umfassende Überprüfung von 2025 bildete die Grundlage für die AEAs für die Jahre 2026 bis 2030.

[9] http://unfccc.int/kyoto_protocol/items/2830.php

[10] Umweltbundesamt (2005): NISA National Inventory System Austria, Implementation Report, REP-0004; Umweltbundesamt, Vienna.

[11] https://www.ris.bka.gv.at/Dokumente/BgblPdf/1998_152_1/1998_152_1.pdf

Erfüllung des Rahmenübereinkommens der Vereinten Nationen über Klimaänderungen zu erstellen. In § 6 (2) Z.20 werden die Entwicklung und Führung von Inventuren und Bilanzen zur Dokumentation des Zustandes und der Entwicklung der Umwelt sowie der Umweltbelastungen und ihrer Ursachen ausdrücklich als besondere Aufgaben des Umweltbundesamtes genannt. Dieser Aufgabe wird mit der Erstellung sowie der jährlichen Aktualisierung der *Österreichischen Luftschadstoff-Inventur* (OLI) gemäß den in den relevanten internationalen Übereinkommen vereinbarten Richtlinien vom Umweltbundesamt nachgekommen.

Die OLI deckt sowohl Treibhausgasemissionen, als auch Emissionen sonstiger Luftschadstoffe ab und ist damit die Datenbasis für die Erstellung des vorliegenden Berichts. Um eine vergleichbare Zeitreihe zur Verfügung zu haben wird die OLI erforderlichenfalls auch für zurückliegende Jahre aktualisiert. Die in diesem Bericht dargestellten Emissionsdaten ersetzen somit die publizierten Daten vorhergehender Berichte.

Tabelle B: Datengrundlage des vorliegenden Berichts.

| Inventur | Datenstand | Berichtsformat |
|---|---|---|
| OLI 2025 | 15. Jänner 2026 | Common Reporting Tables (CRT) |

**Hinweis:**

Die in diesem Bericht dargestellten Emissionen in t $CO_2$-Äquivalent wurden mittels Anwendung der Global Warming Potentials („GWPs“) gemäß 5. Sachstandsbericht („AR5“ – „5$^{th}$ Assessment Report“) des Zwischenstaatlichen Ausschusses für Klimaänderungen (IPCC)[12] ermittelt. Damit erfüllt Österreich die ab 2023 geltenden Anforderungen der EU Governance Regulation[13] an THG-Inventuren, die in ihrer Delegierten Verordnung 2020/1044[14] Artikel 2 („Treibhausgaspotentiale“) eine Verwendung der in Anhang 1 dieser Verordnung angeführten Treibhausgaspotentiale gemäß AR5 vorschreibt.

[12] Klimaänderung 2013: Die physikalischen wissenschaftlichen Grundlagen. Beitrag der Arbeitsgruppe I zum Fünften Sachstandsbericht des Zwischenstaatlichen Ausschusses für Klimaänderungen, Appendix 8.A. https://www.ipcc.ch/assessment-report/ar5/

[13] VERORDNUNG (EU) 2018/1999 DES EUROPÄISCHEN PARLAMENTS UND DES RATES vom 11. Dezember 2018 über das Governance-System für die Energieunion und für den Klimaschutz, zur Änderung der Verordnungen (EG) Nr. 663/2009 und (EG) Nr. 715/2009 des Europäischen Parlaments und des Rates, der Richtlinien 94/22/EG, 98/70/EG, 2009/31/EG, 2009/73,/EG, 2010/31/EU, 2012/27/EU und 2013/30/EU des Europäischen Parlaments und des Rates, der Richtlinien 2009/119/EG und (EU) 2015/652 des Rates und zur Aufhebung der Verordnung (EU) Nr. 525/2013 des Europäischen Parlaments und des Rates.

[14] DELEGIERTE VERORDNUNG (EU) 2020/1044 DER KOMMISSION vom 8. Mai 2020 zur Ergänzung der Verordnung (EU) 2018/1999 des Europäischen Parlaments und des Rates im Hinblick auf die Werte für Treibhauspotenziale und die Inventarleitlinien und im Hinblick auf das Inventarsystem der Union sowie zur Aufhebung der Delegierten Verordnung (EU) Nr. 666/2014 der Kommission

# 1 INTRODUCTION

This report presents the latest results from the Austrian greenhouse gas (GHG) inventory, which documents the annual national GHG emissions for the years 1990 to 2024. By documenting annual emissions up to and including the year 2024, the report presents GHG data for the first four years of the target period under the current EU Effort-Sharing-Regulation (ESR, Regulation (EU) 2018/842, as amended (EU) 2023/857[15]) covering greenhouse gas emissions for sectors not covered by the emissions trading system.

The greenhouse gas inventory is submitted to the European Commission by the Austrian Federal Government in fulfilment of Austria's obligations under Article 26 of Regulation (EU) No 218/1999 ("*Governance Regulation*")[16] governing reporting of greenhouse gas inventory data by Member States from 2023 onwards. The purpose of this regulation is to monitor anthropogenic greenhouse gas emissions and to evaluate the progress towards meeting the Union greenhouse gas reduction commitments in accordance with the Paris Agreement.

According to the above-mentioned regulation and the reporting requirements, which are in accordance with those under UNFCCC, Member States are obliged to determine their anthropogenic emissions by sources and removals by sinks by applying the methods described in the *2006 IPCC Guidelines for National Greenhouse Gas Inventories*[17]. Furthermore, Member States are required to submit information in accordance with the *Reporting Guidelines (Decision 24/CP.19)*[18] established by the Conference of the Parties to the UNFCCC.

The national greenhouse gas inventory shall be submitted to the European Commission (EC) every year no later than 15 January. Member States shall submit elements of their national inventory reports (covering CRTs and a National Inventory Document) and inventory information as listed in Annex V referred to in Article 26(3) on 'Annual Reporting' of the EU Governance Regulation[15].

[15] REGULATION (EU) 2023/857 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 19 April 2023 amending Regulation (EU) 2018/842 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement, and Regulation (EU) 2018/1999

[16] REGULATION (EU) 2018/1999 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 December 2018 on the Governance of the Energy Union and Climate Action, amending Regulations (EC) No 663/2009 and (EC) No 715/2009 of the European Parliament and of the Council, Directives 94/22/EC, 98/70/EC, 2009/31/EC, 2009/73/EC, 2010/31/EU, 2012/27/EU and 2013/30/EU of the European Parliament and of the Council, Council Directives 2009/119/EC and (EU) 2015/652 and repealing Regulation (EU) No 525/2013 of the European Parliament and of the Council

[17] http://www.ipcc-nggip.iges.or.jp/public/2006gl/index.html

[18] http://unfccc.int/resource/docs/2013/cop19/eng/10a03.pdf#page=2
http://unfccc.int/resource/docs/2006/sbsta/eng/09.pdf

The 15 January submission includes preliminary data. Finalized data including potential revisions and complemented with a comprehensive National Inventory Document (NID) will be submitted by 15 March 2026.

The elements of the 'Short-NID' are based on the information items referred to in Article 26 (3) and more specifically in Annex V, Part 1 (GHG Inventories Information) of Regulation (EU) 2018/1999[16] (Governance Regulation). In addition to the Governance Regulation, a Commission Implementing Regulation (EU) 2020/1208[19] was adopted, specifying the reporting obligations and providing templates. Information demonstrating that Austria's submission fulfils the obligations as included in Articles 9 to 23 Chapter III of the Commission Implementing Regulation (EU) 2020/1208 is provided in chapter 6.

The complete tables of the Common Reporting Tables (CRTs), including in particular Sectoral Reports, Sectoral Background Tables and the Reference Approach for $CO_2$ are submitted separately in digital form only[20].

Table 1: Status of the present report.

| Reporting Obligation | Format | Inventory | Version |
|---|---|---|---|
| Governance Regulation | Common Reporting Tables (CRT) | OLI 2025 | January 15th 2026 |

Geographical coverage is complete. There is no part of the Austrian territory not covered by the inventory. Emissions are estimated for most sources, as specified in the CRT. Information on sources not estimated ('NE') and emissions included under sources other than those stipulated in the CRT ('IE') are included in CRT Table 9 on *Completeness*.

**Note:**

The $CO_2$-equivalent emissions presented in this report were calculated by applying the Global Warming Potentials ('GWPs') according to the 5th Assessment Report ('AR5')[21] of the Intergovernmental Panel on Climate Change (IPCC)[22]. Thus, Austria fulfils the requirements of the EU Governance Regulation on GHG inventories applicable from 2023

[19] COMMISSION IMPLEMENTING REGULATION (EU) 2020/1208 of 7 August 2020 on structure, format, submission processes and review of information reported by Member States pursuant to Regulation (EU) 2018/1999 of the European Parliament and of the Council and repealing Commission Implementing Regulation (EU) No 749/2014

[20] http://cdr.eionet.europa.eu/at/eu/AT%20GHG/coluq7lfw/envuq7obg

[21] DELEGIERTE VERORDNUNG (EU) 2020/1044 DER KOMMISSION vom 8. Mai 2020 zur Ergänzung der Verordnung (EU) 2018/1999 des Europäischen Parlaments und des Rates im Hinblick auf die Werte für Treibhauspotenziale und die Inventarleitlinien und im Hinblick auf das Inventarsystem der Union sowie zur Aufhebung der Delegierten Verordnung (EU) Nr. 666/2014 der Kommission

[22] IPCC – Intergovernmental Panel on Climate Change (2013): Anthropogenic and Natural Radiative Forcing. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_Chapter08_FINAL.pdf

onwards, which, by means of its Delegated Regulation 2020/1044[23] Article 2 ('Greenhouse Gas Potentials'), requires the use of the GHG potentials listed in Annex 1 of this Regulation in accordance with AR5.

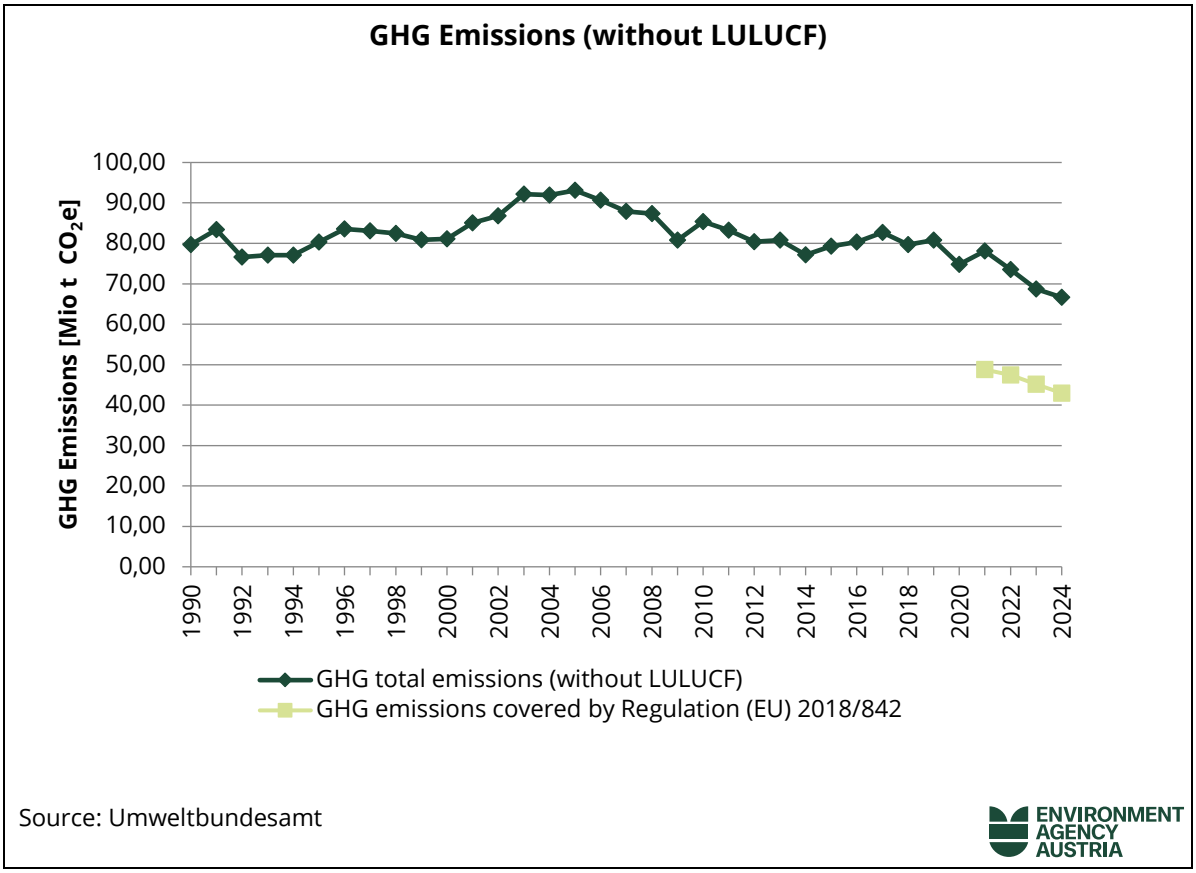
[23] COMMISSION DELEGATED REGULATION (EU) 2020/1044 of 8 May 2020 supplementing Regulation (EU) 2018/1999 of the European Parliament and of the Council with regard to values for global warming potentials and the inventory guidelines and with regard to the Union inventory system and repealing Commission Delegated Regulation (EU) No 666/2014

# 2 EMISSION TRENDS

## 2.1 Overview

In 2024 Austria's total greenhouse gas (GHG) emissions (without Land Use, Land Use Change and Forestry – LULUCF) amounted to 66.6 Mt $CO_2$ equivalents ($CO_2e$). Compared to the 1990 base year[24], 2024 GHG emissions without LULUCF decreased by 16.4%. Compared to 2023, GHG emissions decreased by 3.0%.

Figure 1: Trend in GHG emissions for 1990-2024 without LULUCF.




The year 2024 was characterised by a further decline in economic output, geopolitical uncertainties, and profound changes in the area of energy and climate, such as a decline in fossil fuels, the expansion of renewable energies, and increased implementation of climate policy measures. Also the effects of the war in Ukraine continued to influence

[24] Austria's base year under the UNFCCC is 1990. Under the EU Effort Sharing, the base year is2005 (relates only to emissions not included in the EU Emissions Trading Scheme). Unless otherwise specified, references to the base year in this report refer always to 1990.

energy prices and supply. The population grew by 0.5%, and the weather was slightly milder than in the previous year (-4.1% heating degree days). Key drivers for the development 2023–2024 were the lower natural gas and gasoil consumption, as well as the lower diesel sales especially for freight transport.

Greenhouse gas emissions covered by Regulation (EU) No. 2018/842 ('Effort Sharing Regulation') amounted to 42 688 411 t $CO_2$ equivalents in 2024, and were thus below the level of the annual emission allocation (AEA) for that year (see Table 2).

Table 2: GHG Emissions (covered by the ESR) and status of ESR-target achievement

| **t $CO_2$-Äquivalent (AR5)** | **2021** | **2022** | **2023** | **2024** |
|---|---|---|---|---|
| Total GHG emissions without LULUCF | 78 131 005 | 73 506 582 | 68 674 060 | 66 637 831 |
| Total verified emissions from stationary installations under Directive 2003/87/EC | 28 704 509 | 26 626 257 | 24 413 548 | 23 923 093 |
| Total ESR emissions[25] | 49 402 605* | 46 850 713* | 44 230 130* | 42 688 411* |
| Annual Emission Allocations (AEA) pursuant to Article 4(3) of Regulation (EU) 2018/842, as amended 2023/85726 | 48 768 448 | 47 402 495 | 45 181 662 | 42 960 829 |
| Difference between AEA and reported total ESR emissions | −634 157 | +551 782 | +951 532 | +272 418 |

**Defined as: Total greenhouse gas emissions without LULUCF minus total verified emissions from stationary installations under Directive 2003/87/EC ('ETS emissions') minus $CO_2$ emissions from 1.A.3.a civil aviation.*

Table 2 shows that Austria's ESR emissions in 2024 are around 272 kt $CO_2$ equivalents below the level of the annual emission allocation (AEA) for that year.

## 2.2 Trend description

The largest decreases in emissions between 2023 and 2024 took place in the sectors *Energy (CRT 1)* (−1 485 kt $CO_2$e; −3.3%) and *Industrial Processes and Product Use (CRT 2)* (−479 kt $CO_2$e; −3.1%).

The main reasons for the emissions decrease in sector *Energy (CRT 1)* were the lower gasoil and natural gas consumption in category *1.A.4 Other Sector,* the lower consumption of gasoil and coal in industrial production (category *1.A.2 Manufacturing Industries and Construction)*, as well as a decrease in diesel sales (category *1.A.3.b Road Transport*).

[25] GHG emissions covered by Regulation (EU) 2018/842

[26] as included in Annex II of COMMISSION IMPLEMENTING DECISION (EU) 2023/1319 of 28 June 2023 amending Implementing Decision (EU) 2020/2126 to revise Member States' annual emission allocations for the period from 2023 to 2030.

The emissions decrease in *Industrial Processes and Product Use (CRT 2)* 2023 to 2024 was mainly due to a decrease in production, particularly in the iron and steel production, as well as the cement and ammonia production. The main driver for this reduction was the increased energy costs resulting from the geopolitical situation.

Emissions from *Agriculture (CRT 3)* decreased slightly by 0.4% (−30 kt $CO_2$e) from 2023 to 2024, mainly due to lower livestock numbers, in particular cattle.

In 2024 net emissions from *LULUCF (CRT 4)* were 49.2% (−3 293 kt $CO_2$e) lower than in the previous year. However, it should be noted that the annual variations of the LULUCF category (both positive and negative) are very high over the entire 1990-2024 time series (refer to section 2.2.4).

The declining emission trend of recent decades continues for the *Waste sector (CRT 5)* with a further decline by 3.2% (−42 kt $CO_2$e) mainly due to the decreasing carbon content of waste deposited in preceding years.

Table 3: Summary of Austria's anthropogenic greenhouse gas emissions by sector.

| GHG source and sink categories | 1. Energy | 2. IPPU | 3. Agriculture | 4. LULUCF | 5. Waste | 6. Other |
|---|---|---|---|---|---|---|
| | $CO_2$ equivalents (kt) | | | | | |
| 1990 | 52 842 | 13 686 | 8 576 | −13 721 | 4 565 | NO |
| 1995 | 54 048 | 13 640 | 8 350 | −18 360 | 4 257 | NO |
| 2000 | 55 178 | 14 468 | 8 010 | −18 023 | 3 464 | NO |
| 2005 | 66 615 | 15 675 | 7 575 | −15 190 | 3 223 | NO |
| 2010 | 59 340 | 15 975 | 7 574 | −11 694 | 2 451 | NO |
| 2011 | 57 114 | 16 151 | 7 646 | −10 990 | 2 304 | NO |
| 2012 | 54 894 | 15 729 | 7 585 | −9 116 | 2 176 | NO |
| 2013 | 55 098 | 16 124 | 7 572 | −4 979 | 2 032 | NO |
| 2014 | 51 363 | 16 150 | 7 702 | −9 781 | 1 906 | NO |
| 2015 | 53 192 | 16 588 | 7 730 | −4 040 | 1 806 | NO |
| 2016 | 54 428 | 16 317 | 7 847 | −8 078 | 1 715 | NO |
| 2017 | 56 203 | 17 091 | 7 786 | −4 425 | 1 623 | NO |
| 2018 | 54 911 | 15 509 | 7 686 | 1 817 | 1 549 | NO |
| 2019 | 55 259 | 16 484 | 7 580 | 5 501 | 1 496 | NO |
| 2020 | 50 261 | 15 523 | 7 566 | −1 409 | 1 445 | NO |
| 2021 | 52 172 | 16 960 | 7 605 | −3 871 | 1 395 | NO |
| 2022 | 48 473 | 16 123 | 7 573 | −753 | 1 338 | NO |
| 2023 | 44 589 | 15 307 | 7 483 | 6 698 | 1 295 | NO |
| 2024 | 43 104 | 14 828 | 7 453 | 3 404 | 1 253 | NO |

**not occurring*

The most important gas in the Austrian GHG balance remains carbon dioxide ($CO_2$) with a share of 82.3% of total 2024 emissions (without LULUCF). Emissions of $CO_2$ primarily result from combustion activities. Methane ($CH_4$), which mainly arises from livestock farming and waste disposal, contributes 10.3% to total national GHG emissions. Nitrous oxide ($N_2O$), with agricultural soils as the main source, contributes another 4.9% in 2024. The remaining 2.5% are emissions of fluorinated compounds, which are mostly emitted from the use of these gases as substitutes for ozone depleting substances (ODS) in refrigeration equipment.

Table 4: Austria's anthropogenic greenhouse gas emissions (without LULUCF) by gas.

| GHG emissions | $CO_2$ | $CH_4$ | $N_2O$ | HFCs | PFCs | $SF_6$ | $NF_3$ |
|---|---|---|---|---|---|---|---|
| | $CO_2$ equivalents (kt) | | | | | | |
| 1990 | 62 247 | 11 772 | 4 100 | 2.0 | 1 063 | 485 | NO, NA |
| 1995 | 63 798 | 10 977 | 3 977 | 328 | 75 | 1 134 | 6.0 |
| 2000 | 65 934 | 9 667 | 4 146 | 690 | 80 | 592 | 9.8 |
| 2005 | 78 834 | 8 981 | 3 486 | 1 102 | 150 | 509 | 26 |
| 2010 | 71 860 | 8 380 | 3 217 | 1 462 | 71 | 346 | 3.9 |
| 2011 | 69 819 | 8 146 | 3 304 | 1 558 | 66 | 317 | 3.8 |
| 2012 | 67 116 | 8 011 | 3 273 | 1 608 | 46 | 321 | 8.0 |
| 2013 | 67 661 | 7 890 | 3 257 | 1 650 | 45 | 315 | 9.1 |
| 2014 | 63 975 | 7 729 | 3 368 | 1 668 | 48 | 324 | 9.9 |
| 2015 | 66 164 | 7 644 | 3 435 | 1 696 | 45 | 319 | 13 |
| 2016 | 67 013 | 7 576 | 3 563 | 1 698 | 46 | 405 | 5.7 |
| 2017 | 69 422 | 7 539 | 3 545 | 1 734 | 40 | 412 | 11 |
| 2018 | 66 483 | 7 326 | 3 557 | 1 845 | 30 | 398 | 15 |
| 2019 | 67 793 | 7 198 | 3 582 | 1 748 | 35 | 450 | 13 |
| 2020 | 61 996 | 7 108 | 3 507 | 1 688 | 27 | 454 | 14 |
| 2021 | 65 531 | 7 134 | 3 525 | 1 536 | 24 | 368 | 15 |
| 2022 | 61 214 | 7 053 | 3 363 | 1 475 | 24 | 362 | 16 |
| 2023 | 56 647 | 6 993 | 3 258 | 1 360 | 26 | 372 | 18 |
| 2024 | 54 826 | 6 894 | 3 254 | 1 297 | 18 | 340 | 9 |

The dominant sector causing most GHG emissions in Austria is *1 Energy*, causing 64.7% of the total national GHG emissions (excluding LULUCF) in 2024 (66.3% in 1990), followed by the sectors *2 Industrial Processes and Other Product Use* (22.3% in 2024) and *3 Agriculture* (11.2% in 2024).

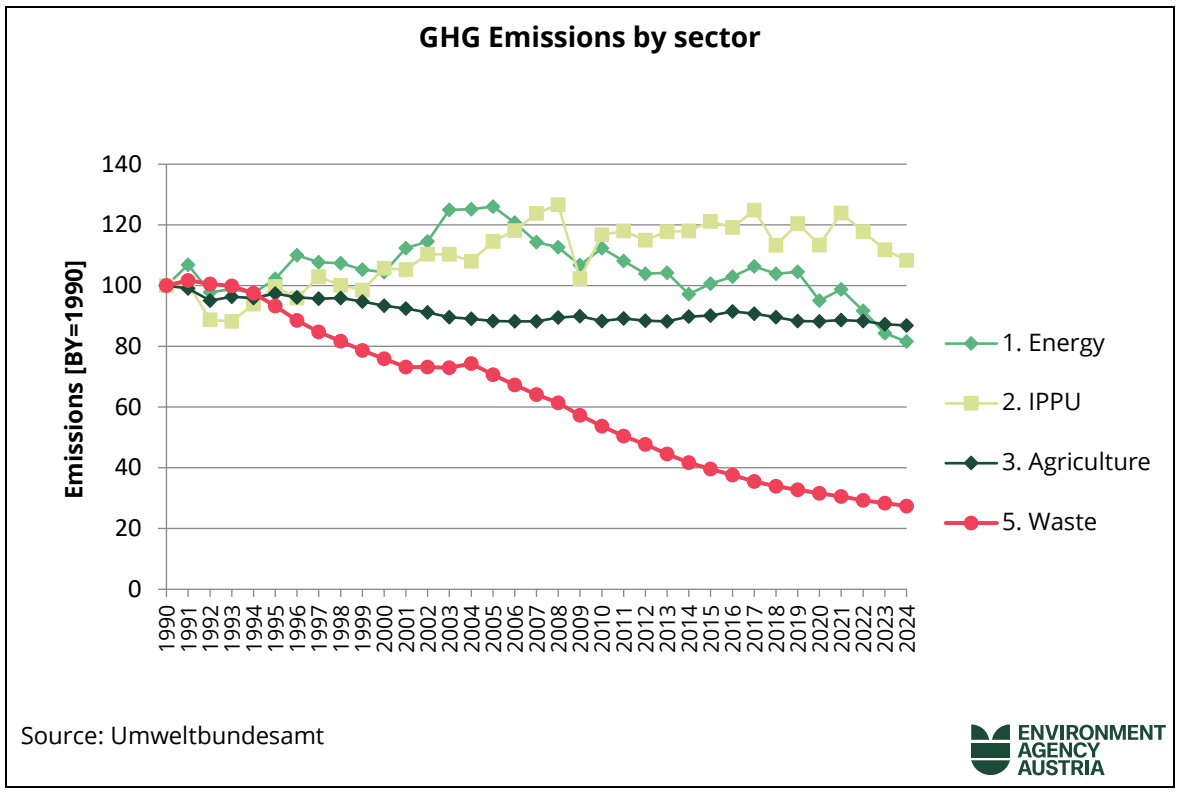
Table 5: Austria's greenhouse gas emissions (without LULUCF) for 1990 and 2024 expressed as aggregate levels and trends, as well as respective sector contributions.

| GHG | 1990 | 2024 | Trend 1990–2024 | 1990 | 2024 |
|---|---|---|---|---|---|
| | Emissions [kt $CO_2e$] | | | Share [%] | |
| **Total** | **79 668** | **66 638** | **−16.4%** | **100%** | **100%** |
| 1 Energy | 52 842 | 43 104 | −18.4% | 66.3% | 64.7% |
| 2 IPPU | 13 686 | 14 828 | 8.3% | 17.2% | 22.3% |
| 3 Agriculture | 8 576 | 7 453 | −13.1% | 10.8% | 11.2% |
| 5 Waste | 4 565 | 1 253 | −72.6% | 5.7% | 1.9% |

*Total emissions without emissions from sector LULUCF*

The only sector with 2024 GHG emissions above the level in 1990 is *2 Industrial Processes and Other Product Use* (+8.3%; +1 142 kt $CO_2e$). All other sectors show decreasing trends in GHG emissions: sector *5 Waste* (−72.6%; −3 312 kt $CO_2e$), sector *1 Energy* (–18.4%; −9 738 kt $CO_2e$) and sector *3 Agriculture* (−13.1%; −1 123 kt $CO_2e$).

Figure 2: Trend in 1990-2024 emissions by sector in index form (1990 = 100).




A more detailed description and interpretation of emissions trends per sector is given in the following sub-chapters.

### 2.2.1 Energy

**In 2024**, greenhouse gas emissions from sector *1 Energy* amounted to 43 104 kt $CO_2$ equivalents, which corresponds to 64.7% of total national emissions without LULUCF. Emissions from *Fuel Combustion Activities* (*1.A*) contribute 99.1% of total *Energy* emissions, while *Fugitive Emissions from Fuels* (*1.B*) are of minor importance.

The **most important sub-category** of *1.A Fuel Combustion Activities* is *1.A.3 Transport* with a share of 45.7% in 2024, followed by *1.A.2 Manufacturing Industries and Construction* (21.4%), *1.A.4 Other Sectors* (15.8%) and *1.A.1 Energy Industries* (17.0%). The **most important greenhouse gas** is $CO_2$, contributing 96.6% to total sectoral GHG emissions, followed by $CH_4$ (1.7%) and $N_2O$ (1.7%).

**From 2023 to 2024**, emissions from category *1.A Fuel Combustion Activities* decreased by 3.3% (−1 477 kt $CO_2$e). The main drivers of the trend were the categories *1.A.2 Manufacturing Industries and Construction* (−310 kt $CO_2$e) due to lower consumption of gasoil and coal, and *1.A.4 Other Sectors* (−575 kt $CO_2$e) due to lower gasoil (−13%) and natural gas (−3.5%) consumption.

Between 2023 and 2024, emissions from *1.A.3 Transport* decreased by 2.8% (−552 kt $CO_2$e), which was mainly due to lower diesel sales (−3.7%).

Emissions of the category *1.A.4 Other Sectors* decreased by 7.8% mainly due to the replacement of fossil fuel heating systems. Heating degree days in 2024 were 4.1% lower than in 2023.

The overall trend of greenhouse gas emissions of the *Energy* sector shows 18.4% lower emissions for 2024 compared to 1990 although emissions from *1.A.3.b Road transport* are 43.4% higher than in 1990. Year to year variations are mainly due to the following factors:

- Weather circumstances in the corresponding years (in particular cold or mild winters, and/or dry or wet summers) which affect the heating demand, and the availability of electricity from hydro and wind power plants
- Economic situation as reflected in the gross domestic product (GDP)
- Change in power generation (switch from coal to gas)

#### Category trends between 1990 and 2024

In 2024, emissions from the category ***1.A.1 Energy Industries*** were 48% below the level in 1990. Emissions from power plants have generally been decreasing since 2005, mainly because of the growing contribution of renewable energy sources, the substitution of solid and liquid fossil fuels by natural gas and biomass, as well as improvements in efficiency.

The share of biomass used as a fuel in this sector increased from 1.5% in 1990 to 37% in 2024. The contribution of hydro, wind and photovoltaic power plants to total public electricity production increased from 69% in 1990 to 88% in 2024. Electricity consumption has increased by 47% since 1990 and since 2002 the increase in consumption has

largely been covered by electricity imports, with the exception of 2024, when a large net export (6.8 TWh) of electricity occurred.

Energy related GHG emissions from ***1.A.2 Manufacturing Industries and Construction*** decreased by 4.9% from 1990 to 2024. Emissions from *Off-road vehicles and other machinery (1.A.2.g.vii)*, *Chemicals Industry (1.A.2.c)* and *Non-Ferrous Metals (1.A.2.b)* increased, while emissions from *Pulp, Paper and Print (1.A.2.d)*, *Other Manufacturing Industries (1.A.2.g.8)* and *Non-Metallic Minerals (1.A.2.f)* decreased since 1990. Fuel consumption increased by 29% in that period, mainly due to increased use of natural gas and biomass. Despite this increase in fuel consumption, GHG emissions from this category have decreased by 4.9% since 1990 as natural gas has a lower carbon content, and $CO_2$ emissions from biomass combustion are not accounted for under the UNFCCC reporting framework.

The category ***1.A.3 Transport*** showed an increase in GHG emissions since 1990 (+39.9%) mainly due to an increase of road performance (mileage) of diesel cars and freight transport. In addition to the increase of road performance **within** Austria, the amount of fuel sold in Austria but **used elsewhere** – an effect called "fuel export" mainly caused by a lower fuel tax compared to Austria's neighbouring countries – has increased considerably since 1990. Between 2005 and 2012 total GHG emissions decreased due to lower amounts of fuel sold together with an increased use of biofuels for blending and the gradual replacement with newer vehicles with lower specific fuel consumption. Since then, GHG emissions from transport have been **gradually increasing** with rising traffic volumes. In the pandemic year 2020 a sharp decrease of emissions was observed followed by an increase due to a slight economic recovery in 2021. Since then, GHG emissions show a decreasing trend. **From 2023 to 2024** emissions from sub-category *1.A.3.b Road Transportation* declined by 2.8% due to a drop in total diesel sales following reduced milage of heavy-duty vehicles on inland roads and increased mileage of electric passenger cars. The use of biofuels has also increased.

The variation in demand for heating and hot water generation due to climatic circumstances and the shift in the fuel mix are important drivers for emissions from the category ***1.A.4 Other Sectors***. Emissions in 2024 were 52.7% lower than in 1990. This reduction is mainly attributable to the displacement of coal-fired heating systems and the progressive shift of heating oil towards natural gas, biomass, district heating and heat pumps, as well as the long-term decreasing trend in the number of heating degree-days. This development is supported by increased energy performance of buildings (thermal renovation, energy-efficient new buildings). Total fuel consumption of this category has decreased by 21.7% since 1990.

Emissions from ***1.B Fugitive Emissions*** decreased by 57.7% since 1990. This is mainly due to the progressive closure of coal mines up until 2006. There have been no coal-mining activities in Austria since 2007 (*1.B.1 Coal Mining and Handling*). Fugitive Emissions from *1.B.2 Oil and Natural gas* are also below the 1990 level (−29.9%) mainly because volumes of crude oil and crude gas produced have declined in recent years.

### 2.2.2 Industrial Processes and Product Use

**In 2024,** greenhouse gas emissions from *Industrial Processes and Product Use* amounted to 14 828 kt $CO_2$ equivalent, which corresponds to 22.3% of total national emissions.

The most important **categories** of this sector are *2.C Metal Industry* and *2.A Mineral Industry*, generating 67.4% and 16.5% of total sectoral emissions, respectively. The most important **greenhouse gas** of this sector is $CO_2$ with a contribution of 88.0% to total sectoral emissions, followed by HFCs with 8.7% and $SF_6$ with 2.3%, the other GHGs contribute below 0.5% each.

**From 2023 to 2024**, overall emissions from this sector decreased by 3.1% (−479 kt $CO_2$ equivalent) mainly due to a decrease in iron and steel production (−124 kt $CO_2$ equivalent) as well as cement (−119 kt $CO_2$ equivalent) and ammonia production (−107 kt $CO_2$ equivalent).

The **overall trend** in GHG emissions from *Industrial Processes and Product Use* shows an increase of 8.3 % from 1990 to 2024. Within this period, emissions were at a minimum in 1993 then increased until peaking in 2008 followed by a significant dip in 2009. Since then, emissions fluctuated just around the mean of these two years. The **main drivers** for the trend in emissions from this sector were (i) the termination of primary aluminium production in 1993, (ii) the introduction of $N_2O$ abatement technologies in the chemical industry in 2004 and in 2009 (which became fully operational in 2010), (iii) the impacts of the 2007-2008 financial crisis , (iv) increasing iron and steel production resulting in 45.6% higher GHG emissions in 2024 compared to 1990 and (iv) a strong increase of HFC emissions over the 1990-2018 period from 2 to 1 845 kt $CO_2$ equivalents.

#### Category trends between 1990 and 2024

The largest increase in GHG emissions between 1990 and 2024 can be observed in the *metal industry* (+20.4 %) due to an increase in GHG emissions from iron and steel production. In the categories *2.A Mineral Industry* and *2.B Chemical Industry*, GHG emissions declined over the same period by 22.2% and 64.9%, respectively. Emissions from *2.D Non-energy products from fuels and solvent use* dropped by 53.4%, due to legal measures controlling the solvent content of products and their use.

Emissions of *fluorinated gases* increased by 7.3% compared to 1990, driven by increasing emissions of HFCs (+395.0% since 1995) due to HFCs replacing Ozone Depleting Substances (ODSs) as cooling agents. Peak emissions were reached in 2018; since then, emissions are decreasing due to bans and restrictions of the EU FC regulation 2024/573.

### 2.2.3 Agriculture

**In 2024,** greenhouse gas emissions from *Agriculture* amounted to 7 453 kt $CO_2$ equivalent, which correspond to 11.2% of total national emissions.

The **most important categories** of this sector are *3.A Enteric Fermentation* (57.2%) and *3.D Agricultural Soils* (23.8%). *Agriculture* is the largest source of national $N_2O$ and $CH_4$ emissions: in 2024, 68.6% (8.4 kt $N_2O$) of total $N_2O$ emissions and 73.7% (181 kt $CH_4$) of total $CH_4$ emissions originated from this sector. Total GHG emissions from the sector *Agriculture* are dominated by $CH_4$, with a share of 68.2%, and $N_2O$, with a share of 29.9%. $CO_2$ emissions account for 1.9% of the emissions from this sector.

**From 2023 to 2024** GHG emissions slightly decreased (−0.4%). The falling cattle numbers (−0.8%) led to reduced GHG emissions from enteric fermentation and are the strongest driver. However, this decrease was nearly counterbalanced by an increase of emissions from mineral fertilizer application (+6.1%). The reasons for the higher mineral fertilizer sales volumes were the decreasing prices, although the seasonal average nitrogen prices were still around 50% above the level of the precrisis year 2020 (BMLUK 2025[27]).

The **overall trend** in GHG emissions from *Agriculture* shows a decrease of 13.1% from 1990 to 2024. The **main drivers** for this trend are decreasing livestock numbers of cattle and swine as well as lower amounts of N-fertilizers applied on agricultural soils.

### 2.2.4 Land Use, Land Use Change and Forestry (LULUCF)

**In 2024,** the LULUCF sector represented a net emission source. The *LULUCF* net emissions in 2024 amounted to 3 404 kt $CO_2$ equivalent, which correspond to 5.1% of national total GHG emissions (without LULUCF) in the same year.

With regard to the **overall trend**, the net removals from *LULUCF* significantly decreased across time since the 1990s and even turned to a source of net emissions in single recent years (2018, 2019, 2023 and 2024) with substantial annual variations over the observed period. In the 1990s the average net removals amounted to −17 000 kt $CO_2$ equivalent per year, whereas in the past five years the LULUCF sector became an average net source of 810 kt $CO_2$ equivalent per year. The **main drivers** for this trend are the biomass and soil carbon stock changes in *Forest land*. Fluctuations are due to weather conditions, which influence growth rates (e.g. very low increment in years of droughts) as well as decay in forest soils, biomass losses and salvage loggings due to natural disturbances (more wind throws and bark beetle infestations in recent years), timber demand and prices (e.g. very high harvest rates in 2007 and 2008).

The **most important category** is *Forest land (4.A)* with net emissions of 2 679 kt $CO_2$ equivalent in 2024. For Forest land remaining Forest land, the biomass increment and dead wood results for 2024 were extrapolated based on an analysis of intermediate results of the ongoing NFI cycle 2022/27, which did not include results for the year 2024.

[27] BMLUK (2025): Grüner Bericht 2025. Bericht über die Situation der österreichischen Land- und Forstwirtschaft. Grüner Bericht gemäß § 9 des Landwirtschaftsgesetzes BGBl. Nr. 375/1992. Bundesministerium Land- und Forstwirtschaft,Klima- und Umweltschutz, Regionen und Wasserwirtschaft, Wien. www.gruenerbericht.at.

The estimates for 2024 for mineral soil are likewise extrapolated, based on a linear trend of the past 15 years, excluding the outlier year 2023. Therefore, results of the year 2024 are preliminary estimates and will be updated in submission 2027 when new intermediate results of the currently ongoing NFI cycle (2022/27) are available, including an updated YASSO modelling run to include these NFI results. These new intermediate NFI results may also lead to revisions in the emissions and removals for the years 2019 to 2023 in the submission 2027.

The category *Harvested Wood Products (4.G)* is **the only sink category** throughout the whole time series, contributing –2 023 kt $CO_2$ equivalent in 2024.

Together, $CH_4$ and $N_2O$ emissions amounted to 197 kt $CO_2$ equivalent in 2024. Total net emissions arising from the other non-forest categories (excluding HWPs) amounted to 2 748 kt $CO_2$ equivalent in 2024.

### 2.2.5 Waste

**In 2024,** greenhouse gas emissions from the sector *Waste* amounted to 1 253 kt $CO_2$ equivalent, which correspond to 1.9% of total national emissions.

The **most important category** of *Waste* is *5.A Solid Waste Disposal*, which caused 60.4% of the emissions from this sector in 2024, followed by *5.D Wastewater Treatment and Discharge* (27.3%) and *5.B Biological Treatment of Solid Waste* (12.1%). The most important greenhouse gas is $CH_4$ with a share of 81.5% in emissions, mainly arising from *solid waste disposal*. $N_2O$ accounts for 18.3% of GHG emissions from this sector.

**From 2023 to 2024** GHG emissions continued to decrease (−3.2%) mainly due to the decreasing carbon content of waste deposited in preceding years.

The **overall trend** in GHG emissions from *Waste* is decreasing, with a decrease of −72.6% from 1990 to 2024. The **main driver** for this trend is the implementation of waste management policies: Waste separation, reuse and recycling activities have increased since 1990 and the amount of disposed waste has decreased correspondingly especially since 2004 when pre-treatment of waste became obligatory (although some exceptions were granted to some Austrian provinces). The legal basis for the reduced disposal of waste as well as the landfill gas recovery is the Landfill Ordinance. Since 2009 all waste with high organic content has to be pre-treated before deposition (without exceptions). Furthermore, methane recovery from landfills was implemented in the 1990s and continues since.

# 3 RECALCULATIONS

The Austrian greenhouse gas inventory is subject to continuous improvement. An inventory improvement programme is a formal part of the Quality Management System (QMS) of the National Inventory System (see chapter 4). This programme enhances transparency and enables monitoring of findings on the quality of activity data, emission factors, methods and other relevant technical elements of the national inventory raised by the review experts of the EU ESR (formerly ESD) and the UNFCCC, and/or other external expert assessments. Any findings and discrepancies are documented; responsibilities, resources and a time schedule for implementation of measures and improvements (incl. recalculations) are included for each of them in the improvement plan (specified for each sector).

This chapter describes the changes in the emissions estimates made since the last submission to the UNFCCC.

## 3.1 Implications (level, trend)

Austria's GHG emissions (excl. LULUCF) reported this year in sum differ slightly from the data submitted last year. The national total (excl. LULUCF) for the base year is 0.06% (47 kt $CO_2$e) higher, the national total (excl. LULUCF) for 2023 is 0.03% (22 kt $CO_2$e) lower than the values submitted last year.

Table 6: Recalculations of Austria's GHG emissions compared to the previous submission.

| | **National Total GHG emissions without LULUCF** | | | |
|---|---|---|---|---|
| | **Submission 2026** | **Submission 2025** | **Recalculation Difference** | |
| | **[kt $CO_2$e]** | **[kt $CO_2$e]** | **[kt $CO_2$e]** | **[%]** |
| 1990 | 79 668 | 79 621 | +47 | +0.06% |
| 1995 | 80 295 | 80 570 | −275 | −0.34% |
| 2000 | 81 119 | 81 389 | −270 | −0.33% |
| 2005 | 93 089 | 93 341 | −252 | −0.27% |
| 2010 | 85 339 | 85 442 | −102 | −0.12% |
| 2011 | 83 214 | 83 251 | −36 | −0.04% |
| 2012 | 80 384 | 80 487 | −103 | −0.13% |
| 2013 | 80 827 | 80 868 | −41 | −0.05% |
| 2014 | 77 121 | 77 215 | −94 | −0.12% |
| 2015 | 79 316 | 79 359 | −43 | −0.05% |
| 2016 | 80 306 | 80 319 | −13 | −0.02% |
| 2017 | 82 703 | 82 635 | +68 | +0.08% |
| 2018 | 79 655 | 79 441 | +213 | +0.27% |

| | National Total GHG emissions without LULUCF | | | |
|---|---|---|---|---|
| | **Submission 2026** | **Submission 2025** | **Recalculation Difference** | |
| | **[kt $CO_2$e]** | **[kt $CO_2$e]** | **[kt $CO_2$e]** | **[%]** |
| 2019 | 80 819 | 80 641 | +178 | +0.22% |
| 2020 | 74 795 | 74 679 | +117 | +0.16% |
| 2021 | 78 131 | 78 073 | +58 | +0.07% |
| 2022 | 73 507 | 73 515 | −8.6 | −0.01% |
| 2023 | 68 674 | 68 696 | −22 | −0.03% |

National total emissions (excluding LULUCF) for **1990** were slightly revised upwards since last years' submission (+47 kt $CO_2$e), mainly due to the improved methodology of $CO_2$ from ammonia production under categories *1.A.2.c. Chemicals* and *2.B.1 Ammonia Production* to obtain a fully consistent time series in line with the IPCC Guidelines. Minor upward revisions are also reported for *2.D Non-Energy Products from Fuels and Solvent Use* (improvement of methodology for paraffin wax use and an estimate for the use of urea for exhaust gas purification in industry as added).

Despite upwards revisions in the transport sector for heavy duty trucks, emissions for **2023** (without LULUCF) in total are lower (−22 kt $CO_2$e) than reported in the previous submission, mainly attributable to the methodological improvements in reporting of $CO_2$ from ammonia production in response to the UNFCCC In-country review 2025 and improvements in the category *2.F.1 Refrigeration and air conditioning* (F-Gases).

Table 7: Recalculations per sector

| | **Submission 2026** | | **Submission 2025** | | **Recalculation Difference** | |
|---|---|---|---|---|---|---|
| **THG** | **1990** | **2023** | **1990** | **2023** | **1990** | **2023** |
| | **[kt $CO_2$e]** | | **[kt $CO_2$e]** | | **[kt $CO_2$e]** | |
| **Total*** | **79 668** | **68 674** | **79 621** | **68 696** | **47** | **−22** |
| 1. Energy | 52 842 | 44 589 | 52 835 | 44 451 | 7.6 | 138 |
| 2. IPPU | 13 686 | 15 307 | 13 641 | 15 472 | 45 | −165 |
| 3. Agriculture | 8 576 | 7 483 | 8 581 | 7 477 | -5.1 | 6.2 |
| 4. LULUCF | −13 721 | 6 698 | −13 756 | 7 530 | 35 | −832 |
| 5. Waste | 4 565 | 1 295 | 4 565 | 1 295 | 0.1 | −0.3 |

**without LULUCF*

Estimates for LULUCF were revised for the entire time series (1990: 35 kt $CO_2$e; 2023: −832 kt $CO_2$e) mainly due to updates in the land representation, the update of harvest indices in Forest land and a revision of the HWP production statistics for the year 2023.

The following table presents the recalculation difference with respect to last years' submission for each gas (positive values indicate that this years' estimate is higher).

Table 8: Recalculations per gas

| | 1990 (Base year) | 2023 |
|---|---|---|
| | Recalculation Difference [kt $CO_2e$] | |
| **Total** | **+47** | **−22** |
| $CO_2$ | +56 | −262 |
| $CH_4$ | +8.5 | +100 |
| $N_2O$ | −17 | +182 |
| HFC, PFC, $SF_6$, $NF_3$ | − | −42 |

*without LULUCF*

Emissions of $CO_2$ and $CH_4$ for **1990** were revised upwards, whereas $N_2O$ was revised downwards compared to the previous submission. No recalculations are reported for the F-Gases. $CO_2$ shows the comparatively highest recalculation, mainly attributable to a methodological improvement of reporting emissions from the ammonia plant, and – to a smaller extend – also due to improvements in category *2.D Non-Energy Products from Fuels and Solvent Use*, in particular paraffin wax use and urea used as a catalyst.

Emissions of $CO_2$ for **2023** were lower than submitted in the previous year, mainly due to the methodological change for reporting of $CO_2$ from ammonia production. Emissions of F-Gases were revised downwards as well, because of the implementation of improvements in the emissions calculation for mobile and stationary air conditioning.

Methane and $N_2O$ emissions were revised upwards compared to the previous submission. The recalculation of $CH_4$ is basically attributable to revisions in the energy balance affecting $CH_4$ from category *1.A.4.b.1 Residential – Stationary combustion*, but relevant revisions of $CH_4$ are also reported for sector *3 Agriculture*, in particular *3.B Manure Management*, but also *3.A Enteric Fermentation.* In both cases activity and nutrition data were updated, while for *3.B Manure Management* methodological improvements were also made. The main reason for the revised 2023 $N_2O$ emissions is the implementation of updated emission factors for road transport as included in the HBEFA v5 (HandBook Emission Factors for Road Transport).

## 3.2 Sectoral recalculations

The following section provides further explanations for sectoral recalculations. Further background information and a complete description of the recalculations for the period 1990–2023 will be presented in Austria's National Inventory Document 2026 that will be submitted in March 2026.

### 3.2.1 Energy

#### 3.2.1.1 Stationary sources

**Update/Improvement of activity data**

**Revision of the energy balance**

The federal statistics office 'Statistik Austria' revised the energy balance (mainly for the years 2021 to 2023) with the following **main implications** for energy consumption as used in the inventory and the corresponding $CO_2$ emissions:

- Natural gas 2023: Gross inland consumption was not revised. Around 0.1 PJ was shifted from final energy consumption to transport losses. Final energy consumption by private households (1.A.4.b) was revised downwards by 0.03 PJ (-2 kt CO2) and final consumption by the manufacturing industry (1.A.2) by 0.1 PJ (-5 kt CO2).
- Gas oil 2023: Around 0.1 PJ (-8 kt CO2) was shifted from the manufacturing industry (1.A.2) to private households (1.A.4.b) and the commercial/institutional sector (1.A.4.a).
- Liquefied natural gas 2023: Around 0.1 PJ (5 kt CO2) was shifted from private households and agriculture to 'non-energy consumption'.
- Solid biomass 2023: Gross domestic consumption was revised upwards by 19.5 PJ. Heating plants (1.A.1.a) were revised upwards by around 1 PJ, private households (1.A.4.b) by around 17 PJ and agriculture (1.A.4.c) by around 1.6 PJ.
- Industrial waste 2023: Gross domestic consumption was revised upwards by 0.5 PJ and added to the manufacturing sector (non metallic minerals). As this sector is covered by emissions trading, this does not result in any changes to the greenhouse gas calculation.

**Methodological changes**

Due to the revision of category *2.C.1.a (see 3.2.2)*, around 103 kt $CO_2$ were shifted to iron and steel (*1.A.2.a*).

For industrial waste, the inventory has been increasingly harmonised with the energy balance since 2008. Emissions from other manufacturing industries (*1.A.2.g*) were revised upwards by 39 kt $CO_2$ in 2023, while emissions from the chemical industry were revised downwards by 60 kt $CO_2$.

Due to the methodological change in ammonia production (*2.B.1*) and the strict application of the IPCC Guidelines, natural gas consumption in the chemical industry (*1.A.2.c*) was reduced retroactively from 1990 onwards (total natural gas consumption for ammonia production, including final consumption, was deducted instead of only non-energy consumption as previously). This resulted in 254 kt less $CO_2$ emissions for the year 2023.

*1.A.2.g.7 Off-road Industry*

A recalculation of $CO_2$ emissions can be observed from 2014 onwards (+8.8 kt $CO_2$e in 2023). This is due to a linking error in the previous submission. In the emission model $CO_2$ emissions excluding $CO_2$ from the use of urea in mobile engines are being calculated by:

- $CO_2$ exkl. $CO_2$ from urea = $CO_2$ total – $CO_2$ from urea

However, in last year's model the *$CO_2$ total* did not include $CO_2$ from urea. Thus, $CO_2$ from urea had been subtracted by mistake. $CH_4$ and $N_2O$ remain unchanged compared to last year's submission. This error also affects emissions from *1.A.4.b.2* and *1.A.4.c.2*.

Urea is an aqueous solution with widespread implementation not only in road vehicles, but also in Non-Road Mobile Machinery (NRMM) starting around the late 2000s. Its use further increased with Stage IV (2014) and Stage V (2019) regulations. It is used in combination with Selective Catalytic Reduction (SCR) systems to reduce nitrogen oxide ($NO_x$) emissions from diesel engines. This technology allows NRMM engines to meet increasingly strict emission limits.

**Methodological changes**

For 1990 to 2023, minor changes in greenhouse gas emissions ($CH_4$ emissions) of the subcategories *1.A.4.a commercial/institutional* and *1.A.4.b residential* occur because of updated heating stock data and newly allocated shares of combustion technologies per energy carrier (updated energy demand model for space heating).

#### 3.2.1.2 Mobile sources

*1.A.3.b Road transport*

The overall revision of emissions from 1.A.3.b Road transport amounted to +222.0 kt $CO_2$e in 2023.

**Update/Improvement of activity data**

**Revision of the energy balance**

Update of natural gas consumption for the years 2022 (−1.3%) and 2023 (−1.4%) due to revisions in the current national energy balance by the federal statistics office 'Statistik Austria'.

**Update of emissions factors**

Emission factors have changed due to an update of the HBEFA (HandBook Emission FActors for Road Transport) (INFRAS 2025), used in Austria's road transport emission model NEMO (old version: HBEFA version V4.2; new version: HBEFA version V5.1.002). Based on over 250 new measurements (chassis dyno and real driving emissions (RDE) tests), the road emission factors were updated, not only for air pollutants, but also for $CO_2$, $CH_4$ and $N_2O$. The most relevant updates regarding fuel consumption and GHG emissions can be summarised as follows:

- More detailed driving situations:
  HBEFA 5.1 uses many more traffic situations (speed, stop-and-go, road type). This leads to more realistic fuel consumption values, especially in urban traffic.
- Cold start emissions are included more broadly:
  Engines consume more fuel when they are cold. HBEFA 5.1 now includes cold start effects for more vehicle types (including HDVs for the first time) and updated existing cold start emission factors. This increases calculated fuel use, especially for short trips.
- Better representation of modern vehicles:
  New technologies (hybrids, BEVs, Euro 6d) are modeled more accurately. This improves fuel and energy consumption estimates for current fleets.
- Updated deterioration functions for HDVs:
  Chemical, thermal and mechanical ageing effects reduce the performance of exhaust aftertreatment systems over their lifetime. New measurement data show a much higher impact especially for $N_2O$, but also for $CH_4$ emissions.

*1.A.4.c.2 Agriculture*

The fleet model has been updated in the NRMM emission model GEORG by implementing battery-electric agricultural tractors. Subsequent emission reductions can be observed for $CH_4$ and $N_2O$ emissions from 2012 onwards. However, $CO_2$ shows increased emissions from 2014 onwards due to the correction of a linking error (see description under *CRT 1.A.2.g.7. Industry* above). The revision for 2023 amounts to +3.9 kt $CO_2$e.

*1.A.5 Military*

The kerosene consumption of military air traffic for the whole time-series was updated (2023: +1.0 kt $CO_2$e) following a recommendation in the recent UNFCCC review in autumn 2025. The various methods have been consolidated by interpolating data between years with actual known fuel consumption data. The last known value (2018) was carried forward as a constant for the subsequent years.

#### 3.2.1.3 Fugitive Emissions

*1.B.2.b.5 Natural gas distribution*

Emissions were slightly revised for 2010 and subsequent years (e.g. for 2023: +0.005 *kt $CO_2e$* ) for the following reasons: Updated data on the gas distribution network became available for 2023. Moreover, the emission factor for grey cast iron gas pipes was adapted in accordance with the LCI 2021, leading to a small recalculation from 2010 onwards.

*1.B.2.b.6.1 Natural gas post-meter*

Emissions were slightly adjusted (e.g. +0.03 *kt $CO_2e$* in 2023) due to the inclusion of natural gas-powered passenger vehicles fleet in the calculation.

### 3.2.2 Industrial Processes and Product Use

**Allocation of emissions between subcategories**

*2.C.1.a Steel*

An input parameter from the energy balance was updated (this only affects the distribution between 1.A.2.a Iron and steel in the Energy sector and 2.C.1 Iron and Steel (IPPU); the total emissions from iron and steel production from both sectors remain unchanged). The difference in the IPPU sector for 2023 equals –103 kt $CO_2$e.

**Methodological improvements**

*2.B.1. Ammonia production*

The methodology for estimating $CO_2$ emissions from ammonia production was fundamentally revised.

Previously, in order to maintain consistency with emissions trading at EU level, the entire carbon input into the production process at the ammonia plant was considered as $CO_2$ emissions (CRT sectors *1.A.2.c* and *2.B.1*). This methodology was subject of discussion during the in-country UNFCCC review in 2025, as the IPCC sees no need for consistency with EU emissions trading and the IPCC methodology stipulates that emissions should generally be accounted for where they actually occur (i.e. taking into account that (i) downstream products of ammonia such as urea temporarily bind carbon and thus part of the carbon input into the process is released time-lagged during use of these products which should be allocated to other IPCC categories, and that (ii) these downstream products might also be exported and emissions might actually occur abroad).

As a follow up to this discussion this year's inventory implemented the IPCC methodology, resulting in a significant decrease in total reported emissions (sum of emissions from ammonia production, downstream processes and product uses) compared to the previous year, which is mainly because the IPCC methodology implicitly accommodates export of products (and actually at least half of the products of the Austrian plant are exported).

ETS emissions from the ammonia plant are now allocated to the following categories:

- Emissions occurring at the plant during production are reported in CRT 2.B Chemical industry (2.B.1 Ammonia production, 2.B.2 Nitric Acid production, 2.B.10 Other chemical bulk production)
- Emissions during use of downstream products in 2.D.3.d Urea used for NOx abatement and in 3.H Urea application and 3.I Other carbon-containing fertilizers.
- As the IPCC methodology considers all carbon input as process input no emissions from the ammonia plant are reported in the energy sector anymore.
- Carbon not considered as emissions (because it is bound in products, which are mainly exported) is reported as recovered $CO_2$ in category 2.B.1 Ammonia production.

Previously reported recovered $CO_2$ only included carbon stored in products used in Austria, and carbon in exported products was considered as emissions in CRT *1.A.2.c* and CRT *2.B.1*.

As a result of the described methodological change, reported emissions of CRT *2.B.1* deviate for the whole time series (for 2023 the deviation amounts to 31.9 kt $CO_2$e compared to last year's submission).

*2.D.3.d Other: urea used as a catalyst*

The estimate for the use of AdBlue in the transport sector was updated based on the latest modelling data. In addition, a new estimate for the use of urea for exhaust gas purification in industry has been added. This led to– a change in emissions over the whole time series (+8.9 kt $CO_2$e for 2023).

*2.D.2 Paraffin Wax Use*

The methodology was changed because a critical examination of the data revealed that the upward trend previously presented was based on weak data. Now, only years with complete data (from 2008 onwards, which show approximately constant values) are used to determine a specific average value for per capita consumption in Austria, which is then applied to all years in relation to the total population. This led to an increase of emissions of +0.7 kt $CO_2$e for 2023.

*2.F.1 Refrigeration and air conditioning*

Minor improvements were implemented in the mobile and stationary air conditioning subsectors (ensuring consistency between subcategories in terms of emission factors and total quantities). The minimal changes in industrial and commercial refrigeration are due to the incorporation of newly available data on total refrigerant consumption in Austria. This change led to a decrease of emissions of –42 kt $CO_2$e in 2023 compared to last year's submission.

*2.G.3 $N_2O$ from product use*

To increase transparency, medical and technical use are now reported separately. The time series for technical use has also been revised with the help of newly available data and information. This led to a decrease of emissions of 2.3 kt $CO_2$e in 2023.

**Update of activity or emissions data**

*2.A.4 Other Process Use of Carbonates*

Provisional figures for 2023 were updated. This led to a change of +9.05 kt $CO_2$e compared to last year's submission.

*2.C.1.f. Other: Electric furnace steel*

Rounding differences for 2013 and 2014 were eliminated. This led to an increase in emissions of 0.0001 kt $CO_2$e.

*2.D.3.a Solvent Use*

The methodology for calculating solvent emissions from industrial and commercial applications was updated with new reporting data for 2024 using new detailed analyses. This led to an increase of emissions of +0.5 kt $CO_2$e for 2023.

*2.F.3 Fire Extinguishers and 2.G.2 Particle Accelerators*

Preliminary data for 2023 was updated. Total change in emissions for 2023 compared to last year's submission: –0.5 kt $CO_2$e.

*2.F.4 Medical Dose Inhalers*

A re-evaluation of the existing data revealed minor changes for some years between 2007 and 2020. Revision of 2012: +0.2 kt $CO_2$e.

### 3.2.3 Agriculture

**Update of activity data**

*3.A Enteric Fermentation, 3.B Manure Management, 3.D Agricultural Soils*

*Background data for feeding and nutrition of dairy cows*

The net energy for pregnancy of dairy cows was slightly recalculated between 2021 and 2023, as updated data on the calving intervals became available from the latest *Zuchtdata*

Report 2024[28]. These improvements led to marginal revisions of the gross energy intake (GE), $N_{excretion}$ and $VS_{excretion}$ between 2021 and 2023.

*Updated feeding and nutrition for sheep, goats, layers and deer*

For the non-key livestock categories sheep, goats, layers and deer feeding and nutrition data was further improved. For sheep and goats the multiple births per year have been considered in the calculations, which led to slightly recalculated net energy requirements for lactation. For deer, in the feeding calculations the share of grazing was corrected, which resulted in slightly revised net energy of activity. For laying hens, the consideration of rearing pullets was improved, which make up about a third of the animals in the category. They consume less feed per day and have a slightly lower crude protein (CP) requirement. Consequently, the country-specific GE-intake, $VS_{excretion}$ and $N_{excretion}$ values have been slightly updated for all these livestock categories.

*Livestock data – poultry*

For 2023 new livestock numbers for poultry (layers, broilers, turkeys and other poultry) became available according to the results of the farm structure survey 2023 (Statistik Austria 2025)[29]. The years 2021 and 2022 were determined by interpolation.

*Biogas plants*

Updated figures for biogas plants (E-CONTROL 2025)[30] resulted in slightly revised $CH_4$ and $N_2O$ emissions with an impact on the source categories *3.B Manure Management, 3.D.1.b.i. Animal manure applied to soils* and *3.D.1.b.iii. Other organic fertilizers applied to* soils for 2020-2023.

*ÖPUL promotion data for slurry separation*

The latest data from the Austrian agri-environmental program ÖPUL[31] (ÖPUL promotion database) of the Federal Ministry of Agriculture and Forestry, Climate and Environmental Protection, Regions and Water Management (BMLUK) on solid-liquid separation of slurry was implemented, which led to slight revisions from 2018 onwards. Nitrogen amounts

[28] Zuchtdata (2024): ZuchtData Jahresbericht 2024. Wien. Jahresberichte - Offizielle Webseite der RINDERZUCHT AUSTRIA

[29] Statistik Austria (2025): Agrarstrukturerhebung 2023. Land- und forstwirtschaftliche Betriebe und deren Strukturdaten. Endgültige Ergebnisse. Wien, 2025. https://www.statistik.at/fileadmin/publications/SB_1-17-Agrarstrukturerhebung_2023.pdf

[30] E-CONTROL (2025): Herkunftsnachweisdatenbank der E-Control gem. Erneuerbaren Ausbau Gesetz (EAG), § 81 Abs 9. https://anlagenregister.at/. Accessed in November 2025.

[31] The Agri-environmental Programme ÖPUL is intended to foster the environmentally sound management of the agricultural areas in Austria. One of the objectives is the reduction of greenhouse gas and ammonia emissions from agriculture.

that are separated are now based on yearly values instead of interpolated numbers between the years 2017 and 2023.

*Sewage sludge*

There have been minor revisions of activity data in 2016, which resulted in marginal revisions in source category *3.D.1.b.ii. Sewage sludge applied to soils*.

*Crop residues*

Minor revisions of harvest amounts from sugar beet in 2023 led to slight recalculations in source category *3.D.1.d. Crop residues*.

*3.A Enteric Fermentation ($CH_4$)*

For dairy cattle, sheep, goats, layers and deer, updated activity and nutrition data (feeding and nutrition, livestock data – see above) became available. The improvements resulted in overall higher emission amounts for the entire time series (+0.2 kt $CH_4$ or +5.7 kt $CO_2e$ for 2023).

*3.D.a.2.c Other organic fertilisers*

Based on the updated activity data for biogas plants (see above), the $N_2O$ emissions for the years 2020-2023 were slightly revised (+0.0001 kt $N_2O$ or +0.03 kt $CO_2e$ for 2023).

*3.D.1.c. Urine and dung deposited by grazing animals*

Livestock related updates (livestock numbers, $N_{excretion}$ values, see above) led to slightly recalculated $N_2O$ emissions from grazed animals for the entire time series (+0.001 kt $N_2O$ or +0.2 kt $CO_2e$ for 2023).

*3.D.1.e. Mineralization/immobilization associated with loss/gain of soil organic matter ($N_2O$)*

Revisions of activity data in cropland remaining cropland categories (for more information see chapter 3.2.4 on LULUCF) resulted in revised $N_2O$ emissions for the entire time series (–0.01 kt $N_2O$ or –2.0 kt $CO_2e$ for 2023).

**Improvements of methodologies and emission factors**

*3.B Manure Management ($CH_4$, direct and indirect $N_2O$)*

Methane and $N_2O$ emissions have been revised by using new and updated activity data (feeding and nutrition, livestock, biogas - see above) but also due to methodological improvements.

No IPCC EFs are available for yards. However, based on new data taken from the latest research project 'Animal husbandry and manure management systems in Austria' ('TIHALO III', PÖLLINGER et al. 2026)[32], the methane calculations could be further improved by adjusting the B0 value and the MCF to Austrian ground conditions in yards. $N_2O$ from yards has also been improved by implementing the new information.

Revisions of the ammonia inventory had an influence on indirect $N_2O$ emission levels. Besides minor improvements e.g. on the time series of grooved floor and partly slatted floor, the improved calculations of straw input as bedding material had the largest impact. Straw inputs are now considered in both storage and spreading. This results in lower $N_2O$ emissions from straw in the field as part of N is already lost during storage.

Additionally, the straw inputs for poultry were updated according to the latest German inventory (NID 2025, KTBL 2024).

In total, the entire time series of 3.*B Manure Management* was revised upwards for methane (+0.6 kt $CH_4$ or 17 kt $CO_2$e for 2023) as well as slightly for $N_2O$ (+0.00003 kt $N_2O$ or +0.01 kt $CO_2$e for 2023).

*3.D Agricultural Soils ($N_2O$)*

*3.D.1.b.i Animal manure applied to soils*

Due to revised activity data and methodologies used for emission calculations in categories *3.A* and *3.B* (see above) the quantities of animal manure applied to soils were revised for the entire time series. Improvements in the ammonia inventory had also impact on the N amounts available for application on soils. Revisions resulted in lower $N_2O$ emissions for the entire time series (–0.02 kt $N_2O$ or –5.6 kt $CO_2$e for 2023).

*3.D.1.d. Crop residues*

In addition to the updated activity data for sugar beet (see above), the amounts of ammonia-nitrogen emitted in storage from straw that is used as bedding material and then returned on agricultural soils as part of the manure, have been considered in the N-flow. These improvements resulted in an overall decrease in $N_2O$ emissions for the entire time series (–0.01 kt $N_2O$ or –2.8 kt $CO_2$e for 2023).

*3.D.b Agricultural Soils (indirect soil emissions – $N_2O$)*

*Atmospheric deposition:* reasons for revised estimates are the updated activity data (see above) and the improvements made within the ammonia inventory (esp. the updated

[32] PÖLLINGER et al. (2026): Erhebung zum Wirtschaftsdüngermanagement aus der landwirtschaftlichen Tierhaltung in Österreich. Surveys on manure management from agricultural livestock farmings in Austria. Abschlussbericht TIHALO III. The final report is currently under preparation and will be published in 2026.

calculations of bedding material). As a result, the indirect $N_2O$ emissions from atmospheric deposition have been revised downwards for the entire time series (–0.02 kt $N_2O$ or –4.6 kt $CO_2e$ for 2023).

*N leaching and run-off:* updated activity data and methodological improvements affected revised N amounts from animal manure applied to soils, grazing, crop residues and mineralisation resulting in revised emissions for the entire time series (–0.01 kt $N_2O$ or –1.7 kt $CO_2e$ for 2023).

### 3.2.4 Land Use, Land Use Change and Forestry (LULUCF)

*General - Land Representation*

The integrated system for quantifying land use and land-use change was further improved for this submission. Errors identified in the aggregation of the statistics on total perennial cropland were corrected. Furthermore, the total national territory area was updated for the whole time series based on the official 2024 statistics according to Federal Office for Metrology and Surveying (BEV). Finally, the spatially explicit maps of land use for the years 2016, 2018, 2020 and 2022, were complemented by a new map for 2024 and were furthermore revised with respect to the following improvements in their compilation:

- Improved corrections of the IACS Alpine meadows covered by forests
- Incorporation of the new BFW Forest map
- Incorporation of the now finalized map of Peatlands (*Moorinventar*); previously an interim result was used for the LU 2022 Baseline layer.
- Gap-filling of *phantom* fields in the IACS fields dataset
- Improved mapping of agricultural areas outside of IACS with the CLC+ Backbone of CLMS

The above improvements have led to minor revisions in the time series of total Cropland, Grassland, Wetland, Settlements and Other land areas, as well as respective conversions that occur between these categories. Total Forest land area, as well as conversions to and from Forest land are unchanged.

*4.A Forest land*

Biomass drain was updated by using relative harvest indices based on the harvest statistics for 2024. By introduction of a new year, the relative harvest indices for the years since 2019 (mid-year of last NFI cycle 2016/21) and the biomass losses due to harvest changed accordingly. Therefore, for the years 2019 to 2023 the results for Forest land changed by approx. –460 kt $CO_2e$ per year.

*4.B Cropland*

The emission factor for biomass in annual cropland was updated based on an analysis of recent harvest statistics for the years 2011-2020. The areas of annual and perennial cropland were updated for the year 2023 based on the results of the sample survey of the FSS (Farm Structure Survey 2023). This led to average recalculations for perennial cropland remaining perennial cropland of –10 kt $CO_2$e for the years 2021 to 2023. All other updates (EF for biomass and the updates of the land representation) led to minor changes of approximately –2 kt $CO_2$e per year for total Cropland for the whole time series.

*4.C Grassland*

The update of the emission factor for biomass in annual cropland led to small recalculations in the sub-category Annual Cropland converted to Grassland. In addition, the area of Grassland has been recalculated and is now approximately 30 kha smaller than in previous submission. With this revision, also land use changes to Grassland were slightly adapted. Overall, these changes led to recalculations ranging between 1 and 7 kt $CO_2$e per year.

*4.D Wetlands*

Off-site C losses now included in the $CO_2$ emissions from Peat extraction remaining Peat extraction for the whole time series. In the previous submission this source of $CO_2$ was erroneously not included. Together with the updated land use change matrix, the average impact of these revisions amounts to +0.2 kt $CO_2$e per year.

*4.E Settlements*

Due to the updates in the land representation the Total Settlements area is on average 14 kha per year larger than in the previous submission. This led to changes in net emissions/removals ranging between –51 and 43 kt $CO_2$e per year.

*4.F Other land*

The updated land representation led to changes in the Total Other Land area of +17 kha per year. This has no impact on the net emissions/removals results.

*4.G HWPs*

The *HWP* production figures for the year 2023 were updated in the most recent FAO statistics. The recalculations in the *HWP* category led to lower removals of this subcategory of 290 kt $CO_2$e for 2023.

*4.VI Biomass burning*

$CH_4$ and $N_2O$ emissions from Forest land wildfires were revised downwards by a change in the activity data on Forest land fires. Previously, the data for 2002 onwards on *total areas* affected by fires were used. These areas represented the total stand area of individual forest stands affected by fires. Now the *reduced areas* are used, representing the actual area for Forest land that is burnt. Furthermore, there were recalculations in the respective Grassland and Cropland biomass stocks affecting GHG emissions from biomass burning in these subcategories. The Grassland combustion factor furthermore was corrected and is now based on the above-ground biomass stock in t dm/ha. Previously, this factor was erroneously based on the Grassland biomass stock in t C ha. The Cropland combustion factor was improved and is based on a new stock value for above-ground biomass of Cropland. All these changes led to average recalculations of –0.08 kt $CO_2$e per year.

### 3.2.5 Waste

**Update of activity data**

*5.B Biological Treatment of Solid Waste*

Minor recalculations were reported for *5.B.1 Composting* of municipal solid waste (2023: + 0.0001 kt $CO_2$e) due to small adaptations of official population data (annual average population).

*5.D Wastewater Treatment and Discharge*

In *5.D.1 Domestic wastewater* small recalculations were made for the whole time series (e.g. 2023: –0.6 kt $CO_2$e) due to some revisions in activity data and methodological adjustments:

- In the calculation of $CH_4$ from C-plants (i.e. plants with carbon removal only, a plant category only relevant for historical years) $S_{mass}$ was adapted for the early 1990's, and CSB freights were corrected for 2010 onwards;
- Statistics Austria adjusted the average population figures;
- Unrounded CSB freights were considered in this year's calculation; in the previous submission CSB data were rounded to whole tons;
- The connection rate (available every two years) was updated for 2024, affecting also 2023 due to interpolation between 2022 and 2024.

For *5.D.2 industrial wastewater* recalculations were reported for 2023 (+0.3 kt $CO_2$e) as the amount of secondary pulp production was revised according to the latest industry report (AUSTROPAPIER 2024[33]).

[33] Austropapier (2024): Papier aus Österreich – Jahresbericht der österreichischen Papierindustrie. Jahresstatistik. Vereinigung der Österreichischen Papierindustrie. Wien

# 4 NATIONAL INVENTORY SYSTEM

The regulations under the UNFCCC define the standards for national emission inventories related to transparency, consistency, comparability, completeness and accuracy (TACCC). Above this, each Party shall have in place a national system[34] including all institutional, legal and procedural arrangements made within a Party for estimating anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, and for reporting and archiving inventory information.

To meet these requirements Austria has set up the National Inventory System Austria (NISA) covering all aspects from establishing a legal basis for inventory preparation along with defining responsibilities, over availability of data, quality control and quality assurance (QA/QC) to continuous improvement of the inventory.

In Austria, emissions of greenhouse gases are estimated together with emissions of air pollutants in a database based on the CORINAIR (CORe INventory AIR)/SNAP (Selected Nomenclature for sources of Air Pollution) system. This nomenclature is designed to estimate not only emissions of greenhouse gases but all kinds of air pollutants. To comply with the reporting obligations under the UNFCCC, emissions data are transferred according to the IPCC Guidelines into the UNFCCC Common Reporting Tables (CRT).

This section provides a short description of the most important aspects of NISA; a detailed description including all required information as set down in Decision 15/CMP.1, part II ("Reporting of supplementary information under Article 7, paragraph 2", D. National systems in accordance with Article 5, paragraph 1) can be found in the Austrian Initial Report[35], in Austria's NID 2025[36] and in the NISA Implementation Report[37].

Austria has a centralized inventory system, with all the work related to inventory preparation being carried out at a single national entity. The most important legal arrangement is the Austrian Environmental Control Act (Umweltkontrollgesetz, UKG[38]), which defines the Umweltbundesamt (Environment Agency Austria) as the single national entity with the overall responsibility for inventory preparation. To comply with the stringent reporting requirements, the Umweltbundesamt established the 'Inspection Body for Emission

[34] 19/CMP.1 Guidelines for national systems under Article 5, paragraph 1, of the Kyoto Protocol; FCCC/KP/CMP/2005/8/Add.3. http://unfccc.int/resource/docs/2005/cmp1/eng/08a03.pdf

[35] BMLFUW (2006): Austria's Initial Report under Article 7, paragraph 4, of the Kyoto Protocol, Federal Ministry of Agriculture and Forestry, Environment and Water Management, Vienna.

[36] UMWELTBUNDESAMT (2025): Austria's National Inventory Document 2025, Submission under the United Nations Framework Convention on Climate Change and under the Paris Agreement. Report REP-0964. Umweltbundesamt, Vienna.

[37] UMWELTBUNDESAMT (2005): NISA National Inventory System Austria, Implementation Report, REP-0004; Umweltbundesamt, Vienna https://www.umweltbundesamt.at/fileadmin/site/publikationen/rep0004.pdf

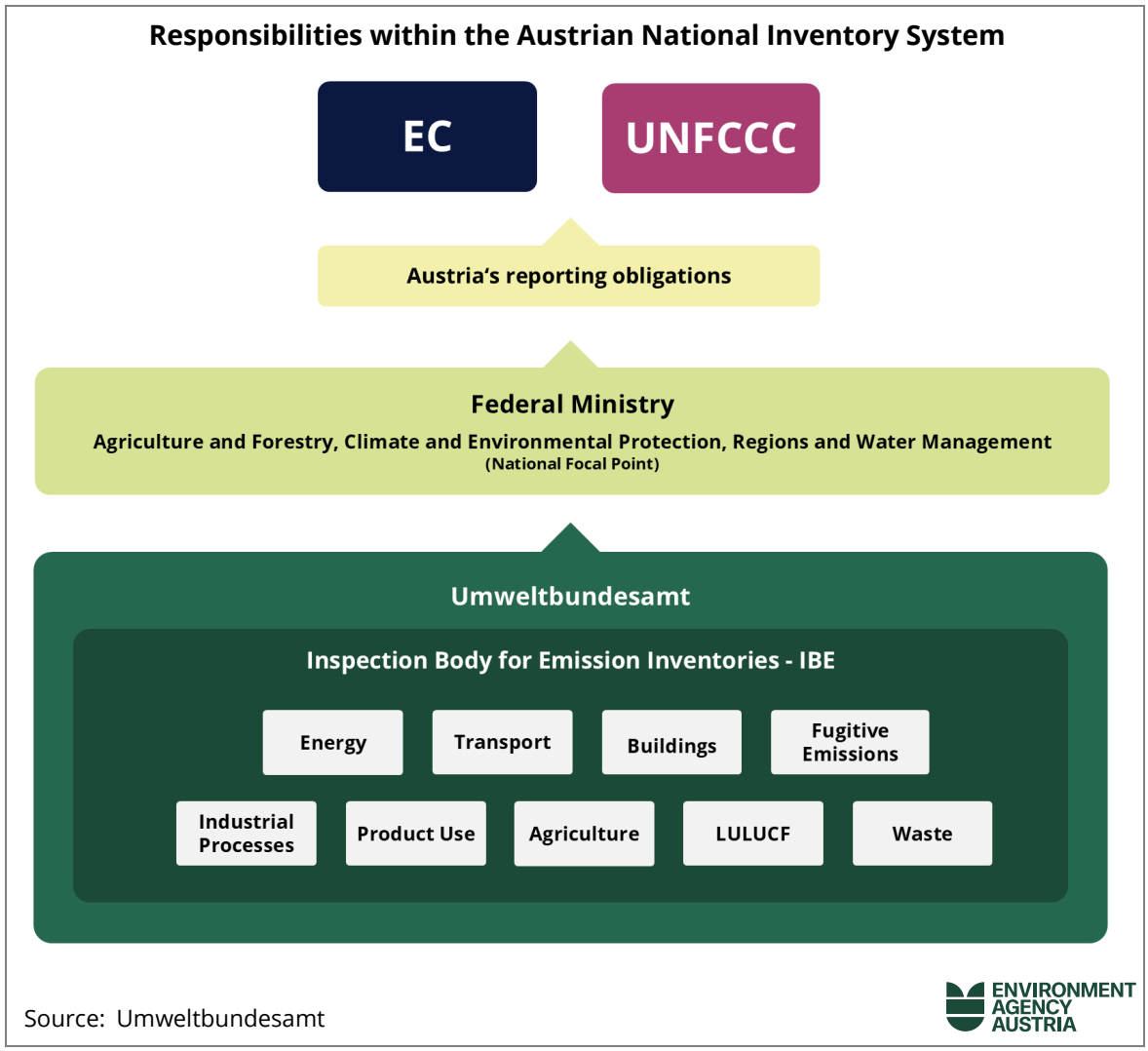
[38] „Umweltkontrollgesetz" – Bundesgesetz über die Umweltkontrolle und die Einrichtung einer Umweltbundesamt Gesellschaft mit beschränkter Haftung; Federal Law Gazette I 152/1998 (as amended by Federal Law Gazette I No. 40/2014)

Inventories' which is entrusted with the preparation of emission inventories as assigned to the Umweltbundesamt under the UKG.

**Inspection Body for Emission Inventories**
**ID No. 0241**

Umweltbundesamt GmbH, Environment Agency Austria
DI Michael Anderl (Head of Inspection Body), Mag. Katja Pazdernik (Deputy)
Spittelauer Laende 5
1090 Vienna, Austria

Figure 3: Responsibilities within the Austrian National Inventory System (greenhouse gases).



The personnel of the Inspection Body for Emission Inventories (IBE) is made up of staff from various organisational units of the Umweltbundesamt, who in the course of their inspection activity for the IBE are formally assigned to the IBE and are therefore under the head of the inspection body. The head of the inspection body has the overall responsibility for the maintenance and continual improvement of the QMS.

The national energy balance is the most important data basis for the Austrian Air Emissions Inventory. The Austrian statistical office (Statistik Austria) is required by contract with the competent ministries to annually prepare the national energy balance. The compilation of several other relevant statistics is regulated by law; other data sources include reporting obligations under national and European regulations and reports of companies and associations.

## 4.1 Legal and institutional arrangements

The Umweltbundesamt is designated as the Single National Entity responsible for inventory preparation including QA/QC.

**LEGAL ARRANGEMENT: ENVIRONMENTAL CONTROL ACT**[39]

- § 5 (regulates responsibilities of the Umweltbundesamt)
  Regulates responsibilities regarding environmental control in Austria and is also the basis for the outsourcing of the 'Umweltbundesamt GmbH'
- § 6 (regulates tasks of the Umweltbundesamt)
  (2)15 …the *Umweltbundesamt* is obliged to prepare "technical expertise for *compliance* with UNECE/LRTAP convention […] and with the UNFCCC and the Kyoto Protocol, including the preparation of emission inventories, evaluation of the impact of measures, and assistance in preparation of reports regarding climate".
- § 11 (regulates financing of the Umweltbundesamt)
  …ensures financial resources for preparation of tasks as referred to in para 6.
- § 7 (regulates issues related to data security)
  …in processing the legally assigned tasks, the Umweltbundesamt is seen as a public authority and can therefore process (confidential) personal data and can exchange these data with other public authorities.

To ensure the availability of data necessary for the annual compilation of the GHG inventory, further legal and institutional arrangements have been made.

[39] „Umweltkontrollgesetz" – Bundesgesetz über die Umweltkontrolle und die Einrichtung einer Umweltbundesamt Gesellschaft mit beschränkter Haftung; Federal Law Gazette I 152/1998 (as amended by Federal Law Gazette I No. 40/2014)

Due to the above mentioned ENVIRONMENTAL CONTROL ACT the following **INSTITUTIONAL ARRANGEMENTS** with data providers were agreed:

1. **Statistik Austria**
    - Statistical yearbook (public)
    - National Energy balance (comprehensive/detailed Energy balance and IEA/Eurostat questionnaire)
        - **Long-term Contract** with the competent ministries
    - Production/Import/Export statistics
    - Agricultural statistics (public)
    - Transport statistics (public)
      *Procedural arrangement:*
        - close cooperation Umweltbundesamt – Statistik Austria on definition of data format and specification
    - Data flow is organised through (encrypted) communication (e-mail) or in case of confidential data through personal handover of CD/DVD
    - Harmonisation of data: elimination of discrepancies

2. **Federal Ministry of Agriculture and Forestry, Climate and Environmental Protection, Regions and Water Management (BMLUK)**

    The BMLUK as representative of the Republic of Austria owns (100%) the Umweltbundesamt, which has the legal status of a limited liability company. As superior authority and in the framework of the ENVIRONMENTAL CONTROL ACT the following institutional agreements regarding access to data of different reporting obligations were agreed:

    - Data on emissions and activity data from installations under the EU ETS (Federal law gazette 118/2011 establishing a scheme for greenhouse gas emission allowance trading)
    - Activity data of certain F-gases (Austrian Fluorinated Compounds Ordinance 139/2007 regarding prohibitions and restrictions of HFCs, PFCs, SF6)
    - Activity data from landfill sites (Austrian Landfill Ordinance No. 39/2008) – EDM (Electronic Data Management)
    - Activity data regarding waste incineration (Austrian Waste Incineration Ordinance No. 35/2013)
    - Emissions data collected in the framework of E-PRTR (Austrian Ordinance No. 380/2007 concerning the establishment of the European Pollutant Release and Transfer Register)
    - Emissions data ($SO_2$, $NO_x$, dust) and activity data from steam boiler installations (Federal law gazette 127/2013 establishing integrated pollution prevention and control)

- Forest fire statistics
  *Procedural arrangement:* The access to the data is organised for free via the EDM – Electronic Data Management – http://edm.gv.at, which is an information network which allows enterprises and authorities to handle registration and notification obligations in the waste and environment sectors online.
  - EDM is the Federal Ministry's central eGovernment initiative and is operated by the Umweltbundesamt
  - EDM aims at sustainably reducing the administrative burden of enterprises and authorities to efficient, electronic recording and notification systems and to ensure a high level of environmental protection in Austria.

**3. Austrian Research Centre for Forests (BFW)**

- National Forest inventory
  - **Contract on a regular interval** with the Federal Ministry of Agriculture and Forestry, Climate and Environmental Protection, Regions and Water Management (BMLUK)
- Forest soil condition survey (of all federal provinces)
- Forest soil modelling
  *Procedural arrangement:* close cooperation Umweltbundesamt – BFW on definition of data format and specification

**4. Research institutions:**

**a. TU Graz (Graz University of Technology)**

- NEMO – Emission model road transport
- IPCC sector 1.A.3.b: calculation of road transport emissions
- IPCC sector 2D: urea use for $NO_x$ abatement in road transport
- GEORG – Emission model of non-road mobile machinery (NRMM): calculation of mobile off-road emissions
- IPCC sectors covered: 1.A.2.g.7, 1.A.3.c, 1.A.3.d, 1.A.4.b.2, 1.A.4.c.2, 1.A.5.b
- Contract on annual basis with Umweltbundesamt
  *Procedural arrangement*: close cooperation Umweltbundesamt – TU Graz

**b. University of Natural Resources and Life Sciences Vienna (BOKU)**

- Emissions model for Agriculture: scientific support for major methodological changes and revisions based on the latest scientific literature as well as provision of professional expertise for specific topics, e.g. feeding and nutrition.
  - Contract on a regular interval with Umweltbundesamt
    *Procedural arrangement:* close cooperation Umweltbundesamt – BOKU

**c. HBLFA Raumberg-Gumpenstein Center for Education and Research**

- Surveys on data on animal husbandry and agricultural practice in Austria, expert judgements

- Joint projects and intensive exchange on a regular interval
  *Procedural arrangement:* no formal agreements but close cooperation

5. **Austrian Economic Chambers and Associations of the Austrian Industries as well as Individual plant operators/companies**
   - Activity data, emission data and relevant parameters; information on the process and abatement technology
   - No formal agreements were made but it is good practice in Austria to have a good cooperation and exchange of knowledge regarding the requirements of GHG and Air pollutants Inventory on a continuing basis
     *Procedural arrangement:* close cooperation

6. **AustroControl**
   - Flight movements per aircraft type and airports (non-standard analysis)
   - *Procedural arrangement:* no formal agreement, but close cooperation Umweltbundesamt – AustroControl on definition of data format and specification

## 4.2 Data Sources

The following table presents the main data sources used for activity data (for unpublished studies a detailed description of the methodologies is given in the NID):

Table 9: Main data sources for activity data.

| Sector | Data Sources for Activity Data |
|---|---|
| Energy | • Energy Balance from Statistik Austria<br>• EU-ETS<br>• Steam boiler database<br>• Small scale combustion market data<br>• Direct information from industry or associations of industry<br>• IMEO Reports (OGMP 2.0) |
| Transport | • Energy Balance from Statistik Austria<br>• Yearly new vehicle registrations from Statistik Austria<br>• Yearly growth rates of transport performance on Austrian roads from Federal Ministry of Agriculture and Forestry, Climate and Environmental Protection, Regions and Water Management (BMLUK)<br>• ZBD: Zentrale Begutachtungsdatenbank (periodically updated specific mileage, “sticker check” according to §57a KFG)<br>• Yearly flight movements from AustroControl<br>• Yearly FC of airport ground activities at Vienna International Airport |

| Sector | Data Sources for Activity Data |
|---|---|
| IPPU | • National production statistics<br>• Austrian foreign trade statistics<br>• EU-ETS<br>• Direct information from industry<br>• National associations of industry<br>• International study groups on specific markets<br>• Surveys at companies<br>• Structural business statistics |
| Agriculture | • National studies<br>• National agricultural statistics obtained from Statistik Austria<br>• National fertilizer statistics, protein content and fat content of milk, obtained from Agrarmarkt Austria (AMA)<br>• National statistics on cattle breeding obtained from Rinderzucht Austria<br>• Distributing company (sales data) |
| LULUCF | • National forest inventory obtained from the Austrian Research Centre for Forests<br>• National agricultural statistics and land use statistics/layers obtained from Statistik Austria and from the IACS system<br>• Wetland and settlement areas from the Real Estate Database and various geographic layers |
| Waste | • Federal Waste Management Plan (Data sources: Database on landfills (1998–2007), Electronic Data Management (EDM) in environment and waste management)<br>• EMREG-OW (Electronic Emission Register of Surface Water Bodies)<br>• National studies |

The main sources of emission factors are:

- National studies for country specific emission factors
- Plant-specific data reported by plant operators
- 2006 IPCC Guidelines for National Greenhouse Gas Inventories[40]
- 2019 Refinement to the 2006 IPCC Guidelines
- EMEP/EEA air pollutant emission inventory guidebooks[41]
- HBEFA, Version 5.1

[40] https://www.ipcc-nggip.iges.or.jp/public/2006gl/

[41] Prepared by the UNECE/EMEP Task Force on Emissions Inventories and Projections (TFEIP) and published by the European Environment Agency (EEA). Latest update: https://www.eea.europa.eu/publications/emep-eea-guidebook-2023

- National forest inventory obtained from the Austrian Research Centre for Forests
- Soil inventories by the Federal States and by the Austrian Federal Office and Research Centre for Forests
- Modelling of the forest soil C stock changes by Austrian Research Centre for Forests

## 4.3 QA/QC Plan (QMS of IBE)

A Quality Management System (QMS) has been designed and implemented to fulfil all requirements of *good practice, i.e.* to improve transparency, consistency, comparability, completeness and accuracy as well as confidence in the national inventory. Since December 2005 the inventory team at the Umweltbundesamt has been accredited as an Inspection Body for emission inventories, Type A (ID No. 0241) in accordance with the international standard EN ISO/IEC 17020 and the Austrian Accreditation Law (AkkG)[42] by decree of Accreditation Austria[43]. This standard takes into account standards regarding a QMS as set out in the EN/ISO 9000 series and even goes beyond: It provides a clear statement of requirements regarding competence, as well as independence, impartiality and integrity.

The accreditation scope of the IBE can be found on akkreditierung-austria.gv.at/overview. Relevant for the underlying report are:

- 2006 IPCC GL for National Greenhouse Gas Inventories
- 2006 GL Supplement Wetlands
- 2006 GL Revised Supplementary KP
- 2019 Refinement to the 2006 IPCC GL

The 2006 IPCC GL with its supplements is basically applied for all sectors. However, sectors 1B Fugitive Emissions, 3 Agriculture and 5 Waste partly already apply the 2019 Refinement, as described in the relevant NID chapters 3.3.3.2.2.4 Post-meter emissions (1.B.2.b.6), 5.2, 5.3, 5.4 and 7.5.2.1.1.

The implementation of QA/QC procedures as required by the IPCC supports the development of national greenhouse gas inventories that can be readily assessed in terms of quality and completeness. The QMS as implemented in the Austrian inventory includes all elements of the QA/QC system outlined in IPCC 2006 GL Volume 1 'QA/QC and Verification', as well as further elements beyond these IPCC requirements. It comprises supporting and management processes in addition to the QA/QC procedures in inventory compilation and thus ensures agreed standards not only within (i) the inventory compilation process and (ii) supporting processes (e.g. archiving), but also for (iii) management processes

[42] *„Akkreditierungsgesetz"*; Federal Law Gazette I No. 28/2012 (as amended by Federal Law Gazette I No. 40/2014)

[43] First decree No. BMWA-92.715/0036-I/12/2005, issued by Accreditation Austria / Federal Ministry of Economics and Labour on 19 January 2006, valid from 23 December 2005

(e.g. annual management reviews, internal audits, regular training of personnel, error prevention).

As part of the QMS an efficient process is established to ensure transparency when collecting and analyzing findings by UNFCCC review experts or any other issues concerning the quality of activity data, emission factors, methods and other relevant technical elements of inventories. Any findings and discrepancies are documented; responsibilities, resources and a time schedule are attributed to each of these in the improvement plan. Measures, which include possible recalculations, are taken by the sector experts.

The Austrian Quality Management System is described in detail in Austria's NID 2025, some aspects and improvements compared to the previous submission are described below (QMS activities and improvements 2025).

The Quality Manual can be downloaded at:
https://www.umweltbundesamt.at/klima/emissionsinventur/emi-akkreditierung

**Sector Experts**

Within the inventory system specific responsibilities for the different emission source/sink categories ('Sector Experts') are defined. There are nine sectors defined (Energy, Buildings, Transport, Fugitive Emissions, Industrial Processes, Product Use, Agriculture, LULUCF and Waste). At least two experts form a sector team with one of them acting as coordinator ('Sector Coordinator'). Sector experts collect activity data, emission factors and finally estimate emissions. The sector experts are also responsible for the choice of methods, data processing, archiving, for contracting studies (if needed), and performing sector-specific Quality Assurance and Quality Control (QA/QC) activities.

In cases which exceed the IBE's resources, the IBE concludes service contracts with qualified institutions (particularly universities or research institutes).

In the course of this activity, the IBE is responsible for

- choice of the contractor i.e. judging his/her expertise with regard to the technical and QMS requirements
- specifying the technical and QMS requirements in the service contract
- performing and documenting a detailed QC check of the results i.e. checking if the specified requirements were fulfilled
- implementation of the results into the emission inventory in line with the technical and QMS requirements particularly the requirement of full reproducibility of the emission inventory

Service contracts have so far been concluded with:

- Technical University Graz (Road and Off-road transport)

- University of Natural Resources and Applied Life Sciences, Research Center Seibersdorf (Agriculture)
- Öko-Recherche, Büro für Umweltforschung und -beratung GmbH (F-gases)
- Institute for Industrial Ecology (Product Use)
- Barbara Amon and Stefan Hörtenhuber (Agriculture)
- Laboratorium für Umweltanalytik GmbH (heavy metals and POPs)
- Forschung Burgenland GmbH (Fugitive emissions)
- EFA Emissionsforschung Austria GmbH (Buildings)

**Data Management**

The Austrian Inventory is based on the SNAP nomenclature which is translated into the nomenclature of the Common Reporting Tables ('CRTs') to comply with the reporting obligations under the UNFCCC. In addition to the actual emission data, the background tables of the CRTs are filled in by the sector experts, and finally QA/QC procedures as defined in the inventory planning process are carried out before the data are submitted to the European Commission and to the UNFCCC.

As part of the QMS's documentation and archiving procedures, a reliable data management system has been established to fulfil the data collecting and reporting requirements. This ensures the necessary documentation and archiving for future reconstruction of the inventory and consequently enables easy access to up-to-date and previously submitted data for the quantitative evaluation of recalculations.

**QMS activities and improvements 2025**

In 2025 three new members joined the inventory, strengthening the sector teams 'Buildings', 'Agriculture' and 'LULUCF'. Austria's inventory team currently consists of 27 members in total.

The new sector experts are undergoing an initial inventory training, that lasts at least one year and ends, after careful consideration of feedback from the mentors, trainers and the trainee, with the official approval as sector experts.

In 2025, nine of our experts participated in international inventory reviews (seven for the European Union and two for the UNFCCC). Furthermore, two staff members passed the UNFCCC review sub-course A 'General and cross-cutting aspects for the technical expert review under the enhanced transparency framework under the Paris Agreement', three passed sectoral sub-courses (B-courses) and one person passed the sub-courses C.1 and C.2.

## 4.4 Changes in the national inventory system

According to Article 26(3) k), specified in Annex V Part1 (d) of the Governance Regulation Member States shall describe in the national inventory document changes in their national inventory systems since the previous submission: In Austria there have been no changes in the national inventory system (NISA) since the submission 2025.

# 5 REPORTING UNDER ARTICLE 26(3) GOVERNANCE REGULATION

According to Section 2 'Annual Reporting', Article 26(3) of the Governance Regulation' No 2018/1999[44] from 2023 on, Member States shall determine and report to the Commission final greenhouse gas inventory data by 15 March each year (year X) and preliminary data by 15 January each year, including the greenhouse gases and the inventory information listed in Annex V.

Information on points (a) – (d) of Part I of Annex V is provided in the respective Common Reporting Tables (CRT). Emissions of GHG referred to in Article 2(1) of Regulation (EU) 2018/842[45] is additionally provided as separate template 'Art19_AnnexXV_Emissions covered by the ESR_2024_1281_AT'. Chapters 2 and 3 of this report include textual information on the GHG emission trends and recalculations and improvements. Information on indicators (e), concluded transfers (f), steps taken to improve inventory estimates, in particular in areas of the inventory that have been subject to adjustments or recommendations following expert reviews (g), allocation of verified emissions reported under Directive 2003/87/EC (h), uncertainties (m) and intended use of flexibilities (n) are provided to the EU Commission as separate templates via electronic upload (EIONET/CDR):

- Art10_AnnexVIII_Recommendations_AT
- Art12_AnnexX_Uncertainty and completeness_AT
- Art13_AnnexXI_Indicators_AT
- Art14_AnnexXII_Consistency with ETS_2024_1281_AT
- Art20_AnnexXVI_Concluded transfers for LULUCF_AT
- Art21_AnnexXVII_Concluded transfers for ESR_AT
- Art22_AnnexXVIII_Intended use of flexibilities_AT
- Art23_AnnexXIX_Use of revenues_AT

Results of consistency checks (i and j) are summarized in chapter 0. Information on changes to Austria's national inventory system, including information on Austria's quality assurance and quality control plans (k, m) are provided in chapters 4 and 5. Changes in the national registry (l) will be summarized in the NID 2026 (Annex).

[44] REGULATION (EU) 2023/857 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 19 April 2023 amending Regulation (EU) 2018/842 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement, and Regulation (EU) 2018/1999

[45] VERORDNUNG (EU) 2023/857 DES EUROPÄISCHEN PARLAMENTS UND DES RATES vom 19. April 2023 zur Änderung der Verordnung (EU) 2018/842 zur Festlegung verbindlicher nationaler Jahresziele für die Reduzierung der Treibhausgasemissionen im Zeitraum 2021 bis 2030 als Beitrag zu Klimaschutzmaßnahmen zwecks Erfüllung der Verpflichtungen aus dem Übereinkommen von Paris sowie zur Änderung der Verordnung (EU) 2018/1999.

## 5.1 Overview of Reporting

In the Commission Implementing Regulation (EU) 2020/1208[46] the reporting obligations were further specified. The fulfilment of the obligations as included in Articles 9 to 23 Chapter III of this Regulation is summarized in the following table.

Table 10: Overview of AT reporting on GHG inventories pursuant to Article 8(2) Commission Implementing Regulation (EU) 2020/1208

| **[Article of] Regulation EU) 2020/1208 (ANNEX VII47)** | **Information to be found:** | **Separate Annex** |
|---|---|---|
| Article 9 Reporting on recalculations | CRT Table 8<br>Short-NID Chapter 3 | Not applicable |
| Article 10 Reporting on implementation of recommendations in Table 1 of Annex VIII | Short-NID Chapter 3.3 | Art10_AnnexVIII_Recommendations_AT |
| Article 10 Reporting on implementation of recommendations in Table 2 of Annex VIII | Short-NID Chapter 3.3*) | Art10_AnnexVIII_Recommendations_AT |
| Article 12(1) Reporting on uncertainty | Template | Art12_AnnexX_Uncertainty and completeness_AT |
| Article 12(2) Reporting on completeness | CRT Table 9 | Not applicable |
| Article 14(1) Reporting on consistency of reported emissions with data from the emissions trading scheme (Annex XII data) | Template | Art14_AnnexXII_Consistency with ETS_2024_1281_AT |
| Article 14(2) Reporting on consistency of reported emissions with data from the emissions trading scheme (textual information) | Short-NID Chapter 6 | Possible (AT: not relevant) |
| Article 15 Reporting on consistency of the reported data on air pollutants | Short-NID Chapter 6 | Possible (AT: not relevant) |
| Article 16 Reporting on consistency of the data reported on fluorinated greenhouse gases | Short-NID Chapter 6 | Possible (AT: not relevant) |
| Article 17 Reporting on consistency with energy statistics | Short-NID Chapter 6 | Possible (AT: not relevant) |

[46] COMMISSION IMPLEMENTING REGULATION (EU) 2020/1208 of 7 August 2020 on structure, format, submission processes and review of information reported by Member States pursuant to Regulation (EU) 2018/1999 of the European Parliament and of the Council and repealing Commission Implementing Regulation (EU) No 749/2014

[47] Overview of reporting on greenhouse gas inventories pursuant to Article 8(2) of Commission Implementing Regulation (EU) 2020/1208

| [Article of] Regulation EU) 2020/1208 (ANNEX VII47) | Information to be found: | Separate Annex |
|---|---|---|
| Article 18 Reporting on changes in descriptions of national inventory systems or registries | Short-NID Chapter 4<br>Short-NID Chapter 5 | Not applicable |

**) The final review report from the latest UNFCCC Review (Submission 2024), conducted in September 2025 'in country', was not published in time to be covered by this template. The Simplified Review conducted in 2025 (FCCC/ETF/SRR/2025/AUT) does not include recommendations. Thus, the content of this template still refers to the status of implementation of recommendations as set in the 2023 UNFCCC Review Report (FCCC/ARR/2023/AUT). For the final submission in March 2026, the template will be updated, provided that a review report will be publishedby then.*

## 5.2 Reporting on Consistency

### 5.2.1 Consistency with EU ETS data (Article 14)

According to Annex V Part 1 point (i), where relevant, the results of the checks performed on the consistency of the emissions reported in the GHG inventories, for the year x-2, with the verified emissions reported under Directive 2003/87/EC, have to be reported.

ETS reports are used as input data for the Austrian greenhouse gas inventory, thus consistency is generally provided. However, part of $CO_2$ emissions from the ammonia plant are reported as recovery emissions under category 2.B.1 (please refer to Chapter 3.2.2 for details).

### 5.2.2 Consistency with other reported data

According to Annex V Part 1 point (j), where relevant, MS have to report on the results of the checks performed on the consistency of the data used to estimate emissions in preparation of the GHG inventories, for the year X-2, with:

1. The data used to prepare inventories of air pollutants pursuant to Directive (EU) 2016/2284
2. The data reported pursuant to Article 19(1) of, and Annex VII to, Regulation (EU) No 517/2014
3. The energy data reported pursuant to Article 4 of, and Annex B to, Regulation (EC) No 1099/2008

#### 5.2.2.1 Data on air pollutants (Article 15)

The Austrian Air Emission Inventory (OLI) covers both, greenhouse gases and air pollutants reported under the NEC Directive (EU) 2016/2284 and CLRTAP. The data basis (activity data and other relevant parameters) is thus consistent for NEC, CLRTAP and reporting under the EU Governance Regulation.

Results of the checks on 2024 national total emissions of $NO_x$, CO, NMVOC and $SO_x$ included in the CRT and the respective emissions that will be reported under NEC and CLRTAP show no differences more than +/−5%. Minor differences are solely due to different reporting requirements regarding air transport and international navigation.

#### 5.2.2.2 Data on fluorinated greenhouse gases (Article 16)

There are no producers of F-gases in Austria. Almost all used F-gases are imported from EU member states, only minor amounts are imported from outside the EU and are thus subject to the quota system of the EU F-Gas regulation 2024/573.

Access to the F-Gas registry was made available to the inventory team (available information included name and contact details of quota holders, quota delegations, authorizations and placing on the market).

National consumption for calculating annual emissions is estimated mainly based on data and information from the handful of main importers. Nonetheless, national statistics, data on F-Gas quota (placing on the market), information from quota holders as well as results from internal verification methodologies were also considered. As the inquiries and internal verification showed that the main importers do not cover the total market, an expert judgement for additional amounts was added (this includes direct imports of major end users or big trading companies, online trading, cross-border purchases, as well as illegal trade). These additional amounts showed a sharp increase in 2018, where the first reduction of the EU quota caused a sharp increase in prices. Also, from that year on, additional Austrian companies beyond the main importers applied for quota. In the following years the Austrian quota market became increasingly unclear, but inquiries showed that almost all amounts officially placed on the market in Austria by additional companies (F-Gas registry data) either were subsequently sold to the main importers (and already considered in the inventory data) or sold to companies abroad.

#### 5.2.2.3 Energy statistics (Article 17)

Checks performed on the consistency of the data used to estimate emissions in preparation of the greenhouse gas inventory for 2024 with the energy data reported pursuant to Article 4 of Regulation (EC) No 1099/2008 show no differences of more than +/−2%.

# 6 ABBREVIATIONS

BEV ..... Battery Electric Vehicle

BMLUK ..... Bundesministerium für Land- und Forstwirtschaft, Klima- und Umweltschutz, Regionen und Wasserwirtschaft/Federal Ministry of Agriculture and Forestry, Climate and Environmental Protection, Regions and Water Management (formerly BMK and BML)

BMWA ..... Bundesministerium für Wirtschaft und Arbeit/Federal Ministry for Economic Affairs and Labour

CDR ..... Central Data Repository

CRT ..... Common Reporting Tables

EC ..... European Community

EEA ..... European Environment Agency

EIONET ..... European Environment Information and Observation NETwork

EMEP ..... Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe

EN ..... European Norm

ESR ..... Effort Sharing Regulation

ETC ..... European Topic Centre

EU ..... European Union

FAO ..... Food and Agricultural Organisation of the United Nations

FC ..... Fuel Consumption

GHG ..... Greenhouse Gas

GWP ..... Global Warming Potential

HBEFA ..... HandBook Emission Factors for Road Transport

HDV ..... Heavy Duty Vehicle

IBE ..... Inspection Body for Emission Inventories

IMEO ..... International Methane Emissions Observatory

IPCC ..... Intergovernmental Panel on Climate Change

IEA ..... International Energy Agency

ISO..... International Standards Organisation

LULUCF..... Land Use, Land-Use Change and Forestry – IPCC CRT Category 4

NEMO ..... Network Emission Model (for the Transport Sector)

NFI..... National Forest Inventory

NFR..... Nomenclature for Reporting (Format of Reporting under the UNECE/CLRTAP Convention)

NISA ..... National Inventory System Austria

OGMP ..... Oil and Gas Methane Partnership

OLI..... Österreichische Luftschadstoff-Inventur/Austrian Air Emission Inventory

PC ..... Passenger Car

QA/QC..... Quality Assurance/Quality Control

QMS ..... Quality Management System

SNAP ..... Selected Nomenclature on Air Pollutants

TAN ..... Total ammoniacal nitrogen

TERT ..... Technical Expert Review Team (under the Governance Regulation)

UNECE/CLRTAP ..... United Nations Economic Commission for Europe, Convention on Long-range Transboundary Air Pollution

UNFCCC..... United Nations Framework Convention on Climate Change

ZBD ..... Zentrale Begutachtungsdatenbank

# ANNEX I: EMISSION TRENDS

This Annex presents emission trends expressed in kt $CO_2$ equivalents applying the GWPs according to the 5th Assessment Report ('AR5').

This report uses the following UNFCCC notation keys for all tables:

**NE** (not estimated)..... for existing emissions by sources and removals by sinks of greenhouse gases which have not been estimated.

**IE** ..... (included elsewhere)for emissions by sources and removals by sinks of greenhouse gases estimated but included elsewhere in the inventory instead of the expected source/sink category.

**NO** (not occurring)..... for emissions by sources and removals by sinks of greenhouse gases that do not occur for a particular gas or source/sink category.

**NA** (not applicable)..... for activities in a given source/sink category that do not result in emissions or removals of a specific gas.

**C** (confidential) ..... for emissions which could lead to the disclosure of confidential information if reported at the most disaggregated level. In this case a minimum of aggregation is required to protect business information.

Table A.I-1: Emission Trends GHG emissions (kt $CO_2e$ in AR5).

| GREENHOUSE GAS SOURCE AND SINK CATEGORIES | 1990 (Base year) | 2000 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total Emissions/Removals with LULUCF** | 65 947 | 63 096 | 77 899 | 82 204 | 79 920 | 77 591 | 71 287 | 73 646 | 72 224 | 71 268 | 75 848 | 67 340 | 75 276 | 72 228 | 78 279 | 81 472 | 86 320 | 73 386 | 74 260 | 72 753 | 75 372 | 70 042 |
| **Total Emissions without LULUCF** | 79 668 | 81 119 | 93 089 | 90 648 | 87 890 | 87 349 | 80 753 | 85 339 | 83 214 | 80 384 | 80 827 | 77 121 | 79 316 | 80 306 | 82 703 | 79 655 | 80 819 | 74 795 | 78 131 | 73 507 | 68 674 | 66 638 |
| **1. Energy** | 52 842 | 55 178 | 66 615 | 63 839 | 60 447 | 59 535 | 56 421 | 59 340 | 57 114 | 54 894 | 55 098 | 51 363 | 53 192 | 54 428 | 56 203 | 54 911 | 55 259 | 50 261 | 52 172 | 48 473 | 44 589 | 43 104 |
| A. Fuel Combustion (Sectoral Approach) | 51 900 | 54 472 | 65 965 | 63 156 | 59 756 | 58 882 | 55 717 | 58 652 | 56 436 | 54 204 | 54 416 | 50 720 | 52 568 | 53 842 | 55 584 | 54 359 | 54 734 | 49 760 | 51 704 | 48 038 | 44 182 | 42 705 |
| 1. Energy Industries | 14 008 | 12 314 | 16 025 | 14 821 | 13 616 | 13 447 | 12 437 | 13 747 | 13 354 | 11 974 | 10 973 | 9 353 | 10 458 | 10 240 | 10 852 | 10 003 | 10 035 | 8 667 | 8 686 | 8 174 | 7 296 | 7 256 |
| 2. Manufacturing Industries and Construction | 9 621 | 9 744 | 11 084 | 10 924 | 10 516 | 10 890 | 10 380 | 11 026 | 11 073 | 10 860 | 10 614 | 10 178 | 10 044 | 10 348 | 10 593 | 10 805 | 10 793 | 10 529 | 10 983 | 10 475 | 9 458 | 9 149 |
| 3. Transport | 13 949 | 18 791 | 24 932 | 23 671 | 23 905 | 22 444 | 21 794 | 22 611 | 21 961 | 21 783 | 22 983 | 22 335 | 22 871 | 23 748 | 24 533 | 24 707 | 24 803 | 21 466 | 22 252 | 21 036 | 20 064 | 19 512 |
| 4. Other Sectors | 14 285 | 13 581 | 13 886 | 13 703 | 11 683 | 12 065 | 11 070 | 11 235 | 10 014 | 9 554 | 9 814 | 8 823 | 9 165 | 9 475 | 9 578 | 8 815 | 9 075 | 9 069 | 9 754 | 8 324 | 7 335 | 6 760 |
| 5. Other | 38 | 43 | 38 | 38 | 37 | 36 | 35 | 35 | 34 | 33 | 32 | 32 | 31 | 30 | 30 | 29 | 29 | 29 | 29 | 29 | 29 | 29 |
| B. Fugitive Emissions from Fuels | 942 | 705 | 650 | 682 | 691 | 653 | 704 | 687 | 678 | 689 | 682 | 642 | 623 | 586 | 619 | 552 | 525 | 500 | 467 | 435 | 407 | 399 |
| 1. Solid Fuels | 373 | 30 | 0 2 | 0 2 | | | | | | | | | NO IE NA | | | | | | | | | |
| 2. Oil and Natural Gas | 569 | 675 | 650 | 682 | 691 | 653 | 704 | 687 | 678 | 689 | 682 | 642 | 623 | 586 | 619 | 552 | 525 | 500 | 467 | 435 | 407 | 399 |
| C. $CO_2$Transport and Storage | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| **2. Industrial Processes and Other Product Use** | 13 686 | 14 468 | 15 675 | 16 172 | 16 947 | 17 338 | 14 005 | 15 975 | 16 151 | 15 729 | 16 124 | 16 150 | 16 588 | 16 317 | 17 091 | 15 509 | 16 484 | 15 523 | 16 960 | 16 123 | 15 307 | 14 828 |
| A. Mineral Industry | 3 138 | 2 775 | 2 903 | 3 056 | 3 272 | 3 285 | 2 729 | 2 673 | 2 797 | 2 715 | 2 730 | 2 730 | 2 753 | 2 797 | 2 807 | 2 917 | 2 825 | 2 837 | 3 040 | 2 917 | 2 565 | 2 442 |
| B. Chemical Industry | 1 494 | 1 519 | 930 | 957 | 888 | 987 | 779 | 780 | 768 | 749 | 719 | 793 | 758 | 794 | 754 | 650 | 845 | 785 | 732 | 662 | 638 | 525 |

| GREENHOUSE GAS SOURCE AND SINK CATEGORIES | 1990 (Base year) | 2000 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C. Metal Industry | 8 304 | 8 489 | 9 800 | 10 154 | 10 714 | 10 962 | 8 550 | 10 420 | 10 430 | 10 085 | 10 470 | 10 409 | 10 825 | 10 388 | 11 159 | 9 470 | 10 376 | 9 518 | 11 039 | 10 449 | 10 121 | 9 995 |
| D. Non-Energy Products from Fuels and Solvent Use | 363 | 229 | 190 | 186 | 182 | 178 | 171 | 172 | 167 | 158 | 154 | 145 | 142 | 147 | 153 | 152 | 155 | 164 | 175 | 182 | 172 | 169 |
| E. Electronics Industry | 133 | 420 | 342 | 356 | 367 | 349 | 112 | 144 | 113 | 97 | 86 | 93 | 102 | 88 | 87 | 78 | 85 | 57 | 53 | 55 | 58 | 37 |
| F. Product Uses as Substitutes for ODS | NO | 686 | 1 098 | 1 111 | 1 185 | 1 242 | 1 343 | 1 460 | 1 557 | 1 606 | 1 648 | 1 666 | 1 694 | 1 696 | 1 730 | 1 841 | 1 745 | 1 686 | 1 533 | 1 473 | 1 358 | 1 296 |
| G. Other Product Manufacture and Use | 253 | 350 | 412 | 353 | 340 | 335 | 322 | 326 | 320 | 318 | 317 | 314 | 312 | 407 | 402 | 402 | 453 | 476 | 388 | 386 | 395 | 363 |
| H. Other (please specify) | NA,NO | NA,NO | NA,NO | NA,NO | NA,NO | NA,NO | NA,NO | NA,NO | NA,NO | NA,NO | NA,NO | NA,NO | NA,NO | NA,NO | NA,NO | NA,NO | NA,NO | NA,NO | NA,NO | NA,NO | NA,NO | NA,NO |
| **3. Agriculture** | 8 576 | 8 010 | 7 575 | 7 564 | 7 565 | 7 671 | 7 712 | 7 574 | 7 646 | 7 585 | 7 572 | 7 702 | 7 730 | 7 847 | 7 786 | 7 686 | 7 580 | 7 566 | 7 605 | 7 573 | 7 483 | 7 453 |
| A. Enteric Fermentation | 5 085 | 4 729 | 4 448 | 4 425 | 4 443 | 4 434 | 4 495 | 4 491 | 4 431 | 4 395 | 4 407 | 4 424 | 4 427 | 4 443 | 4 448 | 4 393 | 4 333 | 4 304 | 4 321 | 4 337 | 4 298 | 4 263 |
| B. Manure Management | 1 343 | 1 195 | 1 130 | 1 135 | 1 160 | 1 151 | 1 181 | 1 189 | 1 193 | 1 196 | 1 207 | 1 222 | 1 238 | 1 249 | 1 268 | 1 259 | 1 254 | 1 256 | 1 272 | 1 278 | 1 276 | 1 277 |
| C. Rice Cultivation | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| D. Agricultural Soils | 2 061 | 1 995 | 1 901 | 1 900 | 1 852 | 1 961 | 1 908 | 1 781 | 1 895 | 1 860 | 1 831 | 1 922 | 1 920 | 2 003 | 1 919 | 1 878 | 1 842 | 1 857 | 1 862 | 1 809 | 1 761 | 1 770 |
| E. Prescribed Burning of Savannas | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| F. Field Burning of Agricultural Residues | 1.1 | 1.0 | 0.9 | 0.8 | 0.9 | 0.8 | 0.8 | 0.7 | 0.5 | 0.3 | 0.2 | 0.3 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.0 | NO | NO | NO | NO |
| G. Liming | 46 | 43 | 54 | 58 | 62 | 72 | 72 | 69 | 77 | 81 | 75 | 75 | 83 | 84 | 86 | 97 | 99 | 99 | 99 | 99 | 95 | 92 |
| H. Urea application | 10 | 19 | 22 | 25 | 28 | 26 | 31 | 29 | 27 | 31 | 30 | 34 | 35 | 39 | 38 | 32 | 27 | 25 | 23 | 26 | 30 | 26 |
| I. Other carbon-containing fertilizers | 31 | 27 | 20 | 20 | 20 | 27 | 23 | 15 | 21 | 22 | 22 | 24 | 27 | 29 | 26 | 26 | 25 | 25 | 27 | 24 | 22 | 24 |
| J. Other | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

| GREENHOUSE GAS SOURCE AND SINK CATEGORIES | 1990 (Base year) | 2000 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **4. Land Use, Land-Use Change and Forestry** | -13 721 | -18 023 | -15 190 | -8 444 | -7 969 | -9 758 | -9 465 | -11 694 | -10 990 | -9 116 | -4 979 | -9 781 | -4 040 | -8 078 | -4 425 | 1 817 | 5 501 | -1 409 | -3 871 | -753 | 6 698 | 3 404 |
| A. Forest Land | -13 532 | -18 648 | -14 512 | -7 414 | -5 650 | -7 836 | -11 136 | -12 031 | -11 069 | -9 806 | -6 578 | -11 137 | -5 528 | -9 725 | -5 459 | 1 067 | 4 232 | -4 045 | -4 783 | -1 564 | 4 918 | 2 679 |
| B. Cropland | 396 | 195 | 96 | 85 | 51 | 108 | 79 | 84 | 82 | 70 | 86 | 107 | 148 | 219 | 281 | 310 | 333 | 379 | 465 | 490 | 443 | 474 |
| C. Grassland | 812 | 604 | 856 | 857 | 865 | 893 | 693 | 685 | 681 | 675 | 679 | 680 | 709 | 684 | 663 | 622 | 619 | 621 | 607 | 609 | 616 | 604 |
| D. Wetlands | 66 | 58 | 69 | 61 | 62 | 72 | 104 | 104 | 108 | 105 | 131 | 106 | 96 | 111 | 95 | 95 | 92 | 92 | 91 | 91 | 93 | 93 |
| E. Settlements | 1 145 | 1 238 | 1 396 | 1 414 | 1 399 | 1 421 | 1 414 | 1 409 | 1 389 | 1 390 | 1 339 | 1 333 | 1 284 | 1 262 | 1 203 | 1 177 | 1 168 | 1 144 | 1 112 | 1 082 | 1 063 | 1 040 |
| F. Other Land | 514 | 419 | 366 | 357 | 348 | 339 | 507 | 506 | 505 | 504 | 503 | 502 | 505 | 509 | 512 | 515 | 519 | 522 | 526 | 530 | 533 | 537 |
| G. Harvested Wood Products | -3 122 | -1 889 | -3 461 | -3 803 | -5 045 | -4 755 | -1 126 | -2 452 | -2 687 | -2 055 | -1 138 | -1 372 | -1 254 | -1 137 | -1 719 | -1 969 | -1 462 | -122 | -1 889 | -1 992 | -968 | -2 023 |
| H. Other | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| **5. Waste** | 4 565 | 3 464 | 3 223 | 3 073 | 2 930 | 2 804 | 2 614 | 2 451 | 2 304 | 2 176 | 2 032 | 1 906 | 1 806 | 1 715 | 1 623 | 1 549 | 1 496 | 1 445 | 1 395 | 1 338 | 1 295 | 1 253 |
| A. Solid Waste Disposal on Land | 4 081 | 2 987 | 2 730 | 2 591 | 2 446 | 2 322 | 2 138 | 1 978 | 1 831 | 1 701 | 1 566 | 1 435 | 1 328 | 1 221 | 1 135 | 1 060 | 1 003 | 950 | 898 | 846 | 799 | 757 |
| B. Biological Treatment of Solid Waste | 35 | 81 | 116 | 123 | 128 | 129 | 130 | 134 | 136 | 140 | 132 | 138 | 141 | 146 | 144 | 144 | 148 | 150 | 153 | 149 | 149 | 152 |
| C. Incineration and Open Burning of Waste | 29 | 13 | 13 | 11 | 8.5 | 6.4 | 4.3 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 |
| D. Waste Water Treatment and Discharge | 420 | 383 | 364 | 349 | 347 | 346 | 341 | 337 | 335 | 333 | 331 | 330 | 335 | 346 | 342 | 342 | 342 | 343 | 341 | 341 | 344 | 342 |
| E. Other | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| **6. Other (please specify)** | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |

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