

AUSTRIA'S NATIONAL INVENTORY REPORT 2021

Submission under the United Nations Framework
Convention on Climate Change
and under the Kyoto Protocol

SUMMARY – ACCESSIBLE FORMAT

REP-0761
Vienna 2021

Since 23 December 2005 the Umweltbundesamt has been accredited as Inspection Body for emission inventories, Type A (ID No. 241), in accordance with EN ISO/IEC 17020 and the Austrian Accreditation Law (AkkG), by decree of Accreditation Austria (first decree, No. BMWA-92.715/0036-I/12/2005, issued by Accreditation Austria / Federal Ministry of Economics and Labour on 19 January 2006).

The information covered refers to the following accreditation scope of the IBE: 2006 IPCC GL for National Greenhouse Gas Inventories, 2006 GL Revised Supplementary KP and 2006 GL Supplement Wetlands (www.bmdw.gv.at/akkreditierung)



EXECUTIVE SUMMARY

ES.1 Background information on greenhouse gas (GHG) inventories and climate change

ES.1.1 Background information on climate change

Climate in a narrow sense is usually defined as the average weather, or more rigorously, as the statistical description in terms of the mean and variability of relevant quantities over a period of time ranging from months to thousands or millions of years. It undergoes natural variability. Since industrialisation started some 150 years ago, mankind has been influencing the climate via the emission of greenhouse gases. In 1992, by adopting the United Nations Convention on Climate Change, the countries of the world came together to prevent harmful effects of climate change. However, the Convention did not include binding commitments to limit GHG emissions. To go this step further the Kyoto Protocol was adopted in 1997: It sets binding emission limits for 37 industrialized countries for the period 2008–2012.

An agreement on a second Kyoto commitment period from 2013 to 2020 was achieved 2012 at the 18th Conference of the Parties in Doha (Qatar) (UNFCCC CMP.8). The agreed reduction for the EU is 20% compared to 1990 emissions, which is in line with the climate and energy package 2020 of the EU.

ES.1.2 Background information on greenhouse gas inventories

To be able to evaluate the trend of greenhouse gas emissions, especially the progress in achieving the emission reduction goal, it is necessary to regularly compile an inventory of GHG emissions. The compilation of these inventories follows rules as agreed under the respective bodies of the UNFCCC and the Kyoto Protocol.

ES.2 Summary of national emission and removal-related trends

In 2019 Austria's total greenhouse gas (GHG) emissions (without LULUCF) amounted to 79.8 Mt CO₂ equivalents (CO₂e). Compared to the base year¹ 1990 GHG emissions increased by 1.8%, compared to 2018 GHG emissions increased by 1.5%.

The most important GHG in Austria remains carbon dioxide (CO₂) with a share of 85% in 2019. The CO₂ emissions primarily result from combustion activities. Methane (CH₄), which mainly arises from stock farming and waste disposal, contributes 7.8% to total national GHG emissions; nitrous oxide (N₂O) with agricultural soils as the main source contributes another 4.3% in 2019. The remaining 2.8% 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.

¹ Austria's base year under the UNFCCC is 1990. Under the Kyoto Protocol the base year for CO₂, CH₄, N₂O, HFCs, PFCs and SF₆ is 1990, for NF₃ it is 2000. Under the EU Effort Sharing Decision, the base year is 2005 (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.

Table 1: Austria's greenhouse gas emissions by gas.

| GHG | Total | CO ₂ | CH ₄ | N ₂ O | HFCs | PFCs | SF ₆ | NF ₃ |
|------|---------------|-----------------|-----------------|------------------|-------|-------|-----------------|-----------------|
| | | | | | | | | |
| 1990 | 78 420 | 62 140 | 10 394 | 4 231 | 2.4 | 1 183 | 471 | NO, NA |
| 1991 | 82 082 | 65 738 | 10 269 | 4 265 | 3.9 | 1 193 | 614 | NO, NA |
| 1992 | 75 469 | 60 236 | 9 984 | 4 076 | 5.6 | 510 | 656 | NO, NA |
| 1993 | 75 709 | 60 661 | 9 900 | 4 106 | 235 | 64 | 744 | NO, NA |
| 1994 | 75 958 | 61 034 | 9 610 | 4 059 | 257 | 71 | 926 | 0.8 |
| 1995 | 79 238 | 64 011 | 9 533 | 4 155 | 349 | 83 | 1 100 | 6.4 |
| 1996 | 82 453 | 67 355 | 9 229 | 4 186 | 417 | 80 | 1 177 | 7.9 |
| 1997 | 82 116 | 67 252 | 8 927 | 4 212 | 505 | 117 | 1 086 | 15.5 |
| 1998 | 81 433 | 66 887 | 8 748 | 4 260 | 604 | 56 | 870 | 9.4 |
| 1999 | 79 898 | 65 640 | 8 567 | 4 251 | 677 | 79 | 676 | 8.2 |
| 2000 | 80 129 | 66 139 | 8 395 | 4 232 | 691 | 88 | 575 | 11 |
| 2001 | 84 065 | 70 139 | 8 237 | 4 107 | 826 | 116 | 629 | 11 |
| 2002 | 85 815 | 71 943 | 8 095 | 4 112 | 939 | 102 | 613 | 11 |
| 2003 | 91 307 | 77 451 | 8 032 | 4 103 | 1 024 | 126 | 549 | 22 |
| 2004 | 90 985 | 77 668 | 8 035 | 3 517 | 1 097 | 158 | 484 | 27 |
| 2005 | 92 147 | 79 068 | 7 801 | 3 515 | 1 079 | 163 | 494 | 28 |
| 2006 | 89 729 | 76 796 | 7 701 | 3 523 | 1 050 | 172 | 453 | 33 |
| 2007 | 86 984 | 74 097 | 7 595 | 3 537 | 1 098 | 230 | 367 | 59 |
| 2008 | 86 440 | 73 472 | 7 470 | 3 719 | 1 144 | 208 | 373 | 53 |
| 2009 | 79 779 | 67 291 | 7 373 | 3 498 | 1 235 | 36 | 342 | 4.5 |
| 2010 | 84 337 | 72 000 | 7 272 | 3 303 | 1 343 | 78 | 336 | 4.1 |
| 2011 | 82 127 | 69 889 | 7 057 | 3 396 | 1 400 | 74 | 307 | 4.1 |
| 2012 | 79 432 | 67 263 | 6 943 | 3 365 | 1 490 | 51 | 312 | 8.6 |
| 2013 | 79 817 | 67 759 | 6 832 | 3 348 | 1 514 | 49 | 305 | 10 |
| 2014 | 76 239 | 64 161 | 6 694 | 3 436 | 1 570 | 53 | 314 | 11 |
| 2015 | 78 462 | 66 352 | 6 607 | 3 450 | 1 681 | 50 | 310 | 13 |
| 2016 | 79 471 | 67 215 | 6 544 | 3 536 | 1 726 | 50 | 393 | 6.1 |
| 2017 | 81 862 | 69 599 | 6 522 | 3 477 | 1 809 | 44 | 400 | 12 |
| 2018 | 78 628 | 66 565 | 6 326 | 3 447 | 1 854 | 33 | 386 | 17 |
| 2019 | 79 842 | 67 962 | 6 194 | 3 447 | 1 750 | 38 | 436 | 14 |

NOTE: Emissions without LULUCF

Over the period 1990–2019 CO₂ emissions increased by 9.4%, mainly due to increased emissions from transport. CH₄ emissions decreased during the same period by 40% mainly due to lower emissions from solid waste disposal sites; N₂O emissions decreased by 19% over the same period due to lower emissions from agricultural soils and the chemical industry. HFC emissions increased remarkably between 1990 and 2019 (from 2.4 to 1 750 kt CO₂e), whereas PFC and SF₆ emissions decreased by 97% and 7.3% respectively. NF₃ emissions amounted to 14 kt CO₂ equivalents in 2019 compared to zero emissions in 1990.

ES.3 Overview of source and sink category emission estimates and trends

The dominant sector regarding GHG emissions in Austria is *Energy*, causing 69% of total national GHG emissions in 2019 (67% in 1990), followed by the sectors *Industrial Processes and Other Product Use* (21% in 2019) and *Agriculture* (9.0% in 2019).

Table 2: Austria's greenhouse gas emissions by sector.

| GHG source and sink categories | 1. | 2. | 3. | 4. | 5. | 6. |
|---------------------------------|--------|--------|-------------|---------|-------|-------|
| | Energy | IPPU | Agriculture | LULUCF | Waste | Other |
| CO ₂ equivalent [kt] | | | | | | |
| 1990 | 52 804 | 13 570 | 8 120 | -12 196 | 3 926 | NO* |
| 1991 | 56 458 | 13 604 | 8 025 | -16 964 | 3 996 | NO |
| 1992 | 51 849 | 11 961 | 7 712 | -11 939 | 3 948 | NO |
| 1993 | 52 182 | 11 911 | 7 693 | -12 237 | 3 922 | NO |
| 1994 | 51 818 | 12 643 | 7 673 | -12 095 | 3 825 | NO |
| 1995 | 54 280 | 13 508 | 7 797 | -13 373 | 3 653 | NO |
| 1996 | 58 340 | 12 965 | 7 684 | -10 732 | 3 464 | NO |
| 1997 | 57 019 | 14 134 | 7 646 | -19 242 | 3 317 | NO |
| 1998 | 56 852 | 13 768 | 7 616 | -17 403 | 3 197 | NO |
| 1999 | 55 786 | 13 531 | 7 504 | -19 706 | 3 077 | NO |
| 2000 | 55 254 | 14 495 | 7 415 | -16 627 | 2 965 | NO |
| 2001 | 59 474 | 14 359 | 7 363 | -19 468 | 2 868 | NO |
| 2002 | 60 684 | 15 009 | 7 256 | -14 427 | 2 866 | NO |
| 2003 | 66 204 | 15 130 | 7 103 | -5 029 | 2 870 | NO |
| 2004 | 66 317 | 14 654 | 7 081 | -9 370 | 2 933 | NO |
| 2005 | 66 869 | 15 467 | 7 017 | -10 833 | 2 794 | NO |
| 2006 | 63 955 | 16 088 | 7 012 | -5 075 | 2 675 | NO |
| 2007 | 60 596 | 16 770 | 7 071 | -5 302 | 2 547 | NO |
| 2008 | 59 699 | 17 094 | 7 213 | -4 009 | 2 435 | NO |
| 2009 | 56 515 | 13 753 | 7 243 | -4 366 | 2 268 | NO |
| 2010 | 59 424 | 15 693 | 7 095 | -5 724 | 2 125 | NO |
| 2011 | 57 095 | 15 864 | 7 173 | -6 103 | 1 995 | NO |
| 2012 | 54 951 | 15 477 | 7 123 | -5 451 | 1 882 | NO |
| 2013 | 55 159 | 15 792 | 7 113 | -4 483 | 1 754 | NO |
| 2014 | 51 436 | 15 904 | 7 257 | -4 351 | 1 642 | NO |
| 2015 | 53 085 | 16 552 | 7 274 | -4 163 | 1 551 | NO |
| 2016 | 54 315 | 16 302 | 7 390 | -4 014 | 1 464 | NO |
| 2017 | 56 023 | 17 114 | 7 341 | -4 745 | 1 385 | NO |
| 2018 | 54 592 | 15 471 | 7 254 | -5 127 | 1 311 | NO |
| 2019 | 55 048 | 16 383 | 7 152 | -4 636 | 1 260 | NO |

* not occurring

ES.4 Other information

Overview of Emission Estimates and Trends of Indirect GHGs and SO₂

Emissions of indirect greenhouse gases decreased in the period from 1990 to 2019: NO_x by 34%, CO by 60%, NMVOC by 68%, and SO₂ by 85%. The most important emission source for NO_x, SO₂ and CO is *Energy* (fuel combustion). The most important emission source for NMVOC is *Agriculture*.

Table 3: Emissions of indirect GHGs and SO₂ 1990–2019.

| Year | NO _x | CO | NMVOC | SO ₂ |
|------|-----------------|-------|-------|-----------------|
| | | [kt] | | |
| 1990 | 216 | 1 253 | 335 | 74 |
| 1991 | 226 | 1 261 | 329 | 71 |
| 1992 | 214 | 1 204 | 306 | 54 |
| 1993 | 206 | 1 142 | 286 | 53 |
| 1994 | 198 | 1 076 | 263 | 47 |
| 1995 | 197 | 972 | 248 | 47 |
| 1996 | 214 | 966 | 238 | 44 |
| 1997 | 201 | 892 | 224 | 40 |
| 1998 | 212 | 846 | 215 | 36 |
| 1999 | 204 | 730 | 204 | 34 |
| 2000 | 210 | 725 | 180 | 32 |
| 2001 | 221 | 698 | 175 | 32 |
| 2002 | 228 | 666 | 170 | 31 |
| 2003 | 239 | 669 | 166 | 31 |
| 2004 | 239 | 651 | 153 | 26 |
| 2005 | 245 | 626 | 157 | 26 |
| 2006 | 236 | 626 | 159 | 27 |
| 2007 | 229 | 602 | 155 | 23 |
| 2008 | 216 | 583 | 150 | 20 |
| 2009 | 202 | 563 | 137 | 15 |
| 2010 | 203 | 578 | 137 | 16 |
| 2011 | 194 | 560 | 132 | 15 |
| 2012 | 189 | 559 | 130 | 15 |
| 2013 | 188 | 562 | 124 | 14 |
| 2014 | 180 | 526 | 118 | 14 |
| 2015 | 177 | 537 | 112 | 14 |
| 2016 | 169 | 533 | 112 | 13 |
| 2017 | 161 | 524 | 112 | 13 |
| 2018 | 149 | 483 | 109 | 12 |
| 2019 | 142 | 497 | 108 | 11 |