umweltbundesamt
ENVIRONMENT AGENCY AUSTRIA

AUSTRIA'S NATIONAL INVENTORY REPORT 2022

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

SUMMARY – ACCESSIBLE FORMAT
REP-0811

VIENNA 2022

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.

The decision to negotiate a new global agreement for the period after 2020 was made at the Conference of the Parties in Durban in 2011. In December 2015, this was adopted at the 21st Conference of the Parties in Paris. It entered into force on November 4, 2016, as more than 55 Parties covering at least 55% of global GHG emissions ratified it.

The Paris Agreement established the long-term 2°C target for the first time in an international treaty. It also calls for additional efforts to limit temperature increases to 1.5°C. In contrast to the Kyoto Protocol, this new agreement includes not only industrialized but also newly industrializing and developing countries in order to take account of the change in the global distribution of GHG emissions. Plans for emission reductions (Nationally Determined Contributions, NDCs) of the participating countries have been submitted to the UNFCCC.

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 2020 Austria's total greenhouse gas (GHG) emissions (without LULUCF) amounted to 73.6 Mt CO_2 equivalents (CO_2e). Compared to the base year[1] 1990 GHG emissions decreased by 6.2%, compared to 2019 GHG emissions decreased by 7.7%.

The most important gas in the Austrian GHG balance remains carbon dioxide (CO_2) with a share of 84% of total 2020 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 7.9% to total national GHG emissions; nitrous oxide (N_2O), with agricultural soils as the main source, contributes another 4.8% in 2020. The remaining 3.0% 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 1: Austria's greenhouse gas emissions by gas.

GHG	Total	CO_2	CH_4	N_2O	HFCs	PFCs	SF_6	NF_3
				CO_2 equivalent [kt]				
1990	**78 423**	62 145	10 111	4 511	2.4	1 183	471	NO, NA
1991	**82 095**	65 744	9 999	4 542	3.9	1 193	614	NO, NA
1992	**75 464**	60 244	9 725	4 323	5.6	510	656	NO, NA
1993	**75 806**	60 671	9 763	4 330	235	64	744	NO, NA
1994	**76 039**	61 046	9 466	4 272	258	71	926	0.8
1995	**79 283**	64 023	9 382	4 338	351	83	1 100	6.4
1996	**82 483**	67 367	9 075	4 356	420	80	1 177	7.9
1997	**82 134**	67 264	8 780	4 368	503	117	1 086	16
1998	**81 452**	66 898	8 613	4 412	594	56	870	9.4
1999	**79 922**	65 651	8 436	4 386	685	79	676	8.2
2000	**80 085**	66 150	8 225	4 355	682	88	575	11
2001	**83 989**	70 150	8 055	4 222	807	116	629	11
2002	**85 747**	71 954	7 919	4 214	935	102	613	11
2003	**91 210**	77 461	7 852	4 203	996	126	549	22
2004	**90 856**	77 678	7 847	3 609	1 054	158	484	27
2005	**92 029**	79 078	7 613	3 607	1 047	163	494	28
2006	**89 607**	76 806	7 492	3 614	1 036	172	453	33
2007	**86 841**	74 107	7 372	3 632	1 074	230	367	59
2008	**86 259**	73 482	7 228	3 803	1 111	208	373	53
2009	**79 585**	67 299	7 116	3 580	1 207	36	342	4.5
2010	**84 150**	72 006	7 008	3 389	1 329	78	336	4.1

[1] Austria's base year under the UNFCCC is 1990. Under the Kyoto Protocol the base year for CO_2, CH_4, N_2O, HFCs, PFCs and SF_6 is 1990, for NF_3 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.

GHG	Total	CO_2	CH_4	N_2O	HFCs	PFCs	SF_6	NF_3
				CO_2 equivalent [kt]				
2011	**82 007**	69 893	6 801	3 493	1 435	74	307	4.1
2012	**79 310**	67 266	6 681	3 464	1 528	51	312	8.6
2013	**79 772**	67 759	6 573	3 447	1 629	49	305	10
2014	**76 235**	64 160	6 432	3 538	1 727	53	314	11
2015	**78 487**	66 349	6 354	3 555	1 856	50	310	13
2016	**79 468**	67 211	6 283	3 655	1 871	50	393	6.1
2017	**81 792**	69 593	6 256	3 593	1 894	44	400	12
2018	**78 558**	66 557	6 047	3 553	1 966	33	386	17
2019	**79 741**	67 936	5 914	3 551	1 851	38	436	14
2020	**73 592**	62 037	5 819	3 498	1 757	30	439	12

NOTE: Emissions without LULUCF

Over the period 1990–2020 CO_2 emissions decreased by 0.2%, mainly due to lower CO_2 emissions from fuel combustion activities, in particular due to the Covid 2020 crisis. CH_4 emissions decreased during the same period by 42%, mainly due to lower emissions from solid waste disposal sites; N_2O emissions decreased by 22% over the same period due to lower emissions from agricultural soils and the chemical industry. HFC emissions increased remarkably between 1990 and 2020 (from 2.4 to 1 757 kt CO_2e), whereas PFC and SF_6 emissions decreased by 97% and 6.8% respectively. NF_3 emissions amounted to 12 kt CO_2 equivalents in 2020 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 68% of total national GHG emissions in 2020 (67% in 1990), followed by the sectors *Industrial Processes and Other Product Use* (21% in 2020) and *Agriculture* (9.5% in 2020).

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

GHG source and sink categories	1. Energy	2. IPPU	3. Agriculture	4. LULUCF	5. Waste	6. Other
			CO_2 equivalent [kt]			
1990	52 805	13 574	8 119	-12 065	3 926	NO*
1991	56 458	13 607	8 034	-16 840	3 996	NO
1992	51 849	11 964	7 704	-11 822	3 948	NO
1993	52 182	11 914	7 788	-12 127	3 922	NO
1994	51 818	12 646	7 750	-11 992	3 825	NO
1995	54 279	13 514	7 837	-13 277	3 653	NO
1996	58 339	12 971	7 709	-10 641	3 464	NO

GHG source and sink categories	1. Energy	2. IPPU	3. Agriculture	4. LULUCF	5. Waste	6. Other
	CO_2 equivalent [kt]					
1997	57 019	14 135	7 663	-19 157	3 317	NO
1998	56 851	13 762	7 642	-17 326	3 197	NO
1999	55 785	13 543	7 517	-19 634	3 077	NO
2000	55 253	14 491	7 376	-16 561	2 965	NO
2001	59 473	14 344	7 303	-19 408	2 868	NO
2002	60 682	15 009	7 190	-14 373	2 866	NO
2003	66 202	15 105	7 033	-4 982	2 870	NO
2004	66 316	14 614	6 993	-9 300	2 933	NO
2005	66 868	15 440	6 928	-10 770	2 794	NO
2006	63 953	16 078	6 901	-5 047	2 675	NO
2007	60 594	16 750	6 950	-5 274	2 547	NO
2008	59 698	17 063	7 064	-3 992	2 435	NO
2009	56 512	13 727	7 077	-2 459	2 268	NO
2010	59 419	15 680	6 926	-3 778	2 125	NO
2011	57 089	15 902	7 022	-4 159	1 995	NO
2012	54 942	15 517	6 969	-3 506	1 882	NO
2013	55 148	15 908	6 962	-2 538	1 754	NO
2014	51 424	16 063	7 106	-2 386	1 642	NO
2015	53 071	16 730	7 135	-2 201	1 551	NO
2016	54 300	16 448	7 256	-2 044	1 464	NO
2017	56 005	17 201	7 202	-2 789	1 385	NO
2018	54 573	15 584	7 090	-3 139	1 311	NO
2019	54 977	16 519	6 985	-2 629	1 260	NO
2020	49 929	15 489	6 964	-1 253	1 209	NO

** not occurring*

ES.4 OTHER INFORMATION

Overview of Emission Estimates and Trends of Indirect GHGs and SO_2

Emissions of indirect greenhouse gases decreased in the period from 1990 to 2020: NO_x by 44%, CO by 62%, NMVOC by 67%, and SO_2 by 86%. The most important emission source for NO_x, SO_2 and CO is *Energy* (fuel combustion). The most important emission source for NMVOC is *Agriculture*.

Table 3: Emissions of indirect GHGs and SO_2 1990–2020.

Year	NO_x	CO	NMVOC	SO_2
	[kt]			
1990	218	1 253	334	74
1991	227	1 260	328	71

Year	NO_x	CO	NMVOC	SO_2
		[kt]		
1992	216	1 204	305	54
1993	207	1 141	286	53
1994	199	1 075	263	47
1995	198	971	247	47
1996	216	965	238	44
1997	202	891	223	40
1998	213	845	215	36
1999	205	728	204	34
2000	211	724	180	32
2001	221	696	174	32
2002	229	665	169	31
2003	240	667	165	31
2004	239	649	152	27
2005	246	625	156	26
2006	236	625	158	27
2007	229	602	154	23
2008	216	583	149	20
2009	203	562	136	15
2010	203	578	137	16
2011	194	560	132	15
2012	189	560	130	15
2013	188	563	124	14
2014	180	527	117	14
2015	177	537	112	14
2016	170	532	111	13
2017	161	523	112	13
2018	150	482	109	11
2019	142	496	108	11
2020	123	474	111	10

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