



Framework Convention on Climate Change

Distr.: General
8 July 2011

English only

Report of the in-depth review of the fifth national communication of Austria

Parties included in Annex I to the Convention are requested, in accordance with decision 10/CP.13, to submit a fifth national communication to the secretariat by 1 January 2010. In accordance with decision 8/CMP.3, Parties included in Annex I to the Convention that are also Parties to the Kyoto Protocol shall include in their fifth national communications supplementary information under Article 7, paragraph 2, of the Kyoto Protocol. In accordance with decision 15/CMP.1, these Parties shall start reporting the information under Article 7, paragraph 1, of the Kyoto Protocol with the inventory submission due under the Convention for the first year of the commitment period. This includes supplementary information on the minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol. This report presents the results of the in-depth review of the fifth national communication of Austria conducted by an expert review team in accordance with the relevant provisions of the Convention and Article 8 of the Kyoto Protocol.

Contents

	<i>Paragraphs</i>	<i>Page</i>
I. Introduction and summary	1–10	3
A. Introduction	1–4	3
B. Summary	5–10	3
II. Technical assessment of the reviewed elements	11–126	4
A. National circumstances relevant to greenhouse gas emissions and removals, including legislative arrangements and administrative procedures	11–28	4
B. Policies and measures, including those in accordance with Article 2 of the Kyoto Protocol	29–65	9
C. Projections and the total effect of policies and measures, and complementarity relating to the Kyoto Protocol mechanisms	66–96	18
D. Vulnerability assessment, climate change impacts and adaptation measures.	97–101	25
E. Financial resources and transfer of technology, including information under Articles 10 and 11 of the Kyoto Protocol	102–112	27
F. Research and systematic observation	113–117	29
G. Education, training and public awareness.....	118–121	30
H. Evaluation of supplementary information under Article 7, paragraph 2, of the Kyoto Protocol	122	31
I. Minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol	123–126	31
III. Conclusions and recommendations.....	127–141	32
IV. Questions of implementation	142	35
Annex		
Documents and information used during the review.....		36

I. Introduction and summary

A. Introduction

1. For Austria the Convention entered into force on 29 May 1994 and the Kyoto Protocol on 16 February 2005. Within the burden-sharing agreement of the European Union (EU) for meeting commitments under the Kyoto Protocol, Austria committed itself to reducing its greenhouse gas (GHG) emissions by 13 per cent compared with the base year¹ level during the first commitment period from 2008 to 2012.

2. This report covers the in-country in-depth review (IDR) of the fifth national communication (NC5) of Austria, coordinated by the UNFCCC secretariat, in accordance with the guidelines for review under Article 8 of the Kyoto Protocol (decision 22/CMP.1). The review took place from 24 to 29 January 2011 in Vienna, Austria, and was conducted by the following team of nominated experts from the UNFCCC roster of experts: Ms. Diana Harutyunyan (Armenia), Mr. Matthew Smith (New Zealand), Ms. Silke Wartmann (Germany) and Mr. Xiaoquan Zhang (China). Ms. Wartmann and Mr. Zhang were the lead reviewers. The review was coordinated by Ms. Ruta Bubniene and Mr. Roman Payo (UNFCCC secretariat).

3. During the IDR, the expert review team (ERT) examined each section of the NC5. The ERT also evaluated the supplementary information provided by Austria as a part of the NC5 in accordance with Article 7, paragraph 2, of the Kyoto Protocol. In addition, the ERT reviewed the information on the minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol, which was provided by Austria in its 2010 annual submission under Article 7, paragraph 1, of the Kyoto Protocol.

4. In accordance with decision 22/CMP.1, a draft version of this report was communicated to the Government of Austria, which provided comments that were considered and incorporated, as appropriate, in this final version of the report.

B. Summary

5. The ERT noted that Austria's NC5 complies in general with the "Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications" (hereinafter referred to as the UNFCCC reporting guidelines). As required by decision 15/CMP.1, supplementary information required under Article 7, paragraph 2, of the Kyoto Protocol² is provided in the NC5. Austria considered some of the recommendations provided in the report of the centralized in-depth review of the fourth national communication of Austria.³

6. The supplementary information on the minimization of adverse impacts referred to in paragraph 3 above is complete but only partly transparent, and it was provided on time. During the review, Austria provided further relevant information.

¹ "Base year" refers to the base year under the Kyoto Protocol, which is 1990 for all gases. The base year emissions include emissions from sectors/source categories listed in Annex A to the Kyoto Protocol.

² Decision 15/CMP.1, annex, chapter II.

³ FCCC/IDR.4/AUT.

1. Completeness

7. The NC5 covers all sections required by the UNFCCC reporting guidelines, almost all of the mandatory information required by the UNFCCC reporting guidelines and all supplementary information under Article 7, paragraph 2, of the Kyoto Protocol. The NC5 does not include the following information required by the guidelines on: projections of GHG emissions by gas, of emissions from fuel used in international transport, and of GHG emissions and removals from the land use, land-use change and forestry (LULUCF) sector (see paras. 69 and 70 below); and how “new and additional” financial resources have been determined as such (see para. 103 below). The ERT recommends that Austria enhance the completeness of its reporting by providing this information in its next national communication.

2. Transparency

8. The ERT acknowledged that Austria’s NC5, including supplementary information provided under Article 7, paragraph 2, of the Kyoto Protocol, is mostly transparent. The NC5 in general provides clear information on all aspects of implementation of the Convention and its Kyoto Protocol. The NC5 is structured following the outline contained in the annex to the UNFCCC reporting guidelines and supplementary information submitted under Article 7, paragraph 2, of the Kyoto Protocol is easily identifiable.

9. In the course of the review, the ERT formulated a number of recommendations that could help Austria to further increase the transparency of its reporting with regard to national circumstances (see para. 14 below); projections (see para. 87 below); information on supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol (see para. 96 below); financial resources and technology transfer (see para. 112 below); and information on minimization of adverse impacts (see para. 124 below).

3. Timeliness

10. The NC5 was submitted on 16 February 2010, after the deadline of 1 January 2010 mandated by decision 10/CP.13. In accordance with paragraph 139 of decision 22/CMP.1, on 29 December 2009 Austria informed the secretariat about its difficulties with the timeliness of its national communication submission. As the national communication was not submitted within six weeks after the due date, the delay was brought to the attention of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP) and the Compliance Committee and made public. The ERT noted with great concern the delay in the submission of the NC5.

II. Technical assessment of the reviewed elements

A. National circumstances relevant to greenhouse gas emissions and removals, including legislative arrangements and administrative procedures

11. The NC5 provides a description of the national circumstances and elaborates on the framework legislations and key policy documents on climate change. The NC5 refers to the description of Austria’s national system provided in the report mandated by decision 13/CMP.1, submitted in 2006 (referred to hereinafter as the initial report⁴). Further

⁴ Austria’s initial report under the Kyoto Protocol, available at http://unfccc.int/files/national_reports/initial_reports_under_the_kyoto_protocol/application/pdf/at-initial-report-200611-corr.pdf.

technical assessment of the institutional and legislative arrangements for the coordination and implementation of policies and measures (PaMs) is provided in chapter II.B.1 of this report.

1. National circumstances

12. In its NC5, Austria has provided a description of its national circumstances; information on how some of these national circumstances affect GHG emissions and removals in Austria; and information on how changes in some national circumstances affect GHG emissions and removals in Austria over time. Information is provided on the government structure, population, geography, climate, economy and relevant economic sectors (energy, building stock and urban structure, transport, industry, agriculture, forestry and waste).

13. The ERT noted with appreciation Austria's effort to improve the analysis of the emission trends and their drivers for several sectors, especially for the transport sector, compared with the reporting in the fourth national communication (NC4). However, the ERT noted that Austria did not fully elaborate on how national circumstances affect GHG emissions and removals in Austria, nor on how national circumstances and changes in national circumstances affect GHG emissions and removals over time. During the review, Austria further elaborated on the linkage between recent changes in national circumstances and GHG emission trends.

14. The ERT reiterates the recommendation made in the previous IDR report that Austria provide more in-depth analysis of how changes in its national circumstances affected GHG emissions, including detailed analysis of its emission trends and the main drivers behind them, in its next national communication; for example, analysis of the driving forces for the changes in the respective shares of energy sources (e.g. natural gas) and of how the changes in building stock and urban structure relate to the trend in GHG emissions.

15. The main drivers for GHG emission trends in Austria include demand for transportation and changes in the industrial output (e.g. changes in the output of steel production). Analysis of the drivers for GHG emission trends for each sector is provided in chapter II.B of this report. Table 1 illustrates the national circumstances of the country by providing some indicators relevant to GHG emissions and removals.

Table 1

Indicators relevant to greenhouse gas emissions and removals for Austria

	1990	1995	2000	2005	2008	Change 1990– 2000 (%)	Change 2000– 2008 (%)	Change 1990– 2008 (%)
Population (million)	7.68	7.95	8.01	8.23	8.34	4.3	4.1	8.6
GDP (2000 USD billion using PPP)	179.64	198.98	230.52	249.45	272.71	28.3	18.3	51.8
TPES (Mtoe)	24.78	26.70	28.52	33.99	33.25	15.1	16.6	34.2
GDP per capita (2000 USD thousand using PPP)	23.39	25.03	28.78	30.31	32.70	23.0	13.6	39.8
TPES per capita (toe)	3.23	3.36	3.56	4.13	3.99	10.2	12.1	23.5
GHG emissions without LULUCF (Mt CO ₂ eq)	78.17	79.82	80.30	92.92	86.64	2.7	7.9	10.8

	1990	1995	2000	2005	2008	Change 1990– 2000 (%)	Change 2000– 2008 (%)	Change 1990– 2008 (%)
GHG emissions with LULUCF (Mt CO ₂ eq)	65.03	63.70	63.14	75.58	69.30	-2.9	9.8	6.6
CO ₂ emissions per capita (Mg)	8.08	8.04	8.21	9.69	8.83	1.6	7.6	9.3
CO ₂ emissions per GDP unit (kg per 2000 USD using PPP)	0.35	0.32	0.29	0.32	0.27	-17.1	-6.9	-22.9
GHG emissions per capita (Mg CO ₂ eq)	10.18	10.04	10.02	11.29	10.39	-1.6	3.7	2.1
GHG emissions per GDP unit (kg CO ₂ eq per 2000 USD using PPP)	0.44	0.40	0.35	0.37	0.32	-20.5	-8.6	-27.3

Data sources: (1) GHG emissions data: Austria’s 2010 greenhouse gas inventory submission, common reporting format version 3.2, submitted on 4 November 2010; (2) Population, GDP and TPES data: International Energy Agency.

Note: The ratios per capita and per GDP unit are calculated relative to GHG emissions without LULUCF; the ratios are calculated using the exact (not rounded) values and may therefore differ from a ratio calculated with the rounded numbers provided in the table.

Abbreviations: GDP = gross domestic product, GHG = greenhouse gas, LULUCF = land use, land-use change and forestry, PPP = purchasing power parity, TPES = total primary energy supply.

16. Austria is a federation made up of nine provinces (Länder), each with its own government and parliament. Government responsibilities are shared between the federation, the federal provinces and the local authorities. The Nationalrat and the Bundesrat are the two houses of the Parliament, the main legislative body. The overall responsibility for climate change policymaking lies within the Federal Ministry for Agriculture, Forestry, Environment and Water Management (FMAFEWM), and a number of national institutions are involved in the implementation of this policy.

17. Implementation of the Kyoto Protocol is underpinned by the Climate Strategy, the Energy Strategy (presented to the public in 2010 but not adopted by the Government) and the Climate Act (under preparation). A part of the development and implementation of PaMs is deferred to the provincial and local levels (see para. 37 below). Further legislative arrangements and administrative procedures, including those relating to the national system and the national registry, are presented in chapters II.A.2, II.A.3 and II.B of this report.

18. Between 1990 and 2008, the GHG emission intensity, measured as GHG emissions per unit of gross domestic product (GDP), declined by 27 per cent: GDP grew by 52 per cent whereas total GHG emissions⁵ increased by 11 per cent. GDP, GDP per capita and the population have increased continuously. Total primary energy supply (TPES), TPES per capita, carbon dioxide (CO₂) emissions per capita and GHG emissions per capita followed the trend in GHG emissions: increasing between 1990 and 2005 and decreasing between 2005 and 2008. Information provided by Austria during the review indicates that, compared with in 2008, the national GDP decreased by 3.9 per cent in 2009, mainly as a result of the decline in production in the manufacturing industries (steel production) and transport sectors. GHG emissions excluding LULUCF in 2009 are therefore expected to have decreased significantly. From 2010 onward, Austria’s GDP is expected to grow again.

⁵ In this report, the term “total GHG emissions” refers to the aggregated national GHG emissions expressed in terms of carbon dioxide equivalent (CO₂ eq) excluding LULUCF, unless otherwise specified.

19. The NC5 provides a summary of information on GHG emission trends for the period 1990–2007. This information is consistent with the 2009 annual submission. Summary tables, including trend tables for emissions in CO₂ eq (given in the common reporting format), are also provided in an annex to the NC5. During the review, the ERT considered the most recently submitted 2010 annual submission and it has reflected the findings in this report. Table 2 provides an overview of GHG emissions by sector from 1990 to 2008.

Table 2

Greenhouse gas emissions by sector in Austria, 1990–2008

Sector	GHG emissions (Tg CO ₂ eq)						Change (%)		Share ^a by sector (%)	
	1990	1995	2000	2005	2007	2008	1990–	2007–	1990	2008
							2008	2008		
1. Energy	55.40	57.67	59.08	72.18	65.46	64.73	16.8	–1.1	70.9	74.7
A1. Energy industries	13.84	12.97	12.26	16.18	14.02	13.53	–2.3	–3.5	17.7	15.6
A2. Manufacturing industries and construction	12.77	13.59	13.86	16.14	16.14	16.16	26.5	0.1	16.3	18.7
A3. Transport	14.01	15.98	19.13	24.98	23.83	22.53	60.8	–5.4	17.9	26.0
A4.–A5. Other	14.47	14.77	13.44	14.44	10.98	12.04	–16.8	9.6	18.5	13.9
B. Fugitive emissions	0.31	0.35	0.38	0.44	0.49	0.47	49.8	–4.6	0.4	0.5
2. Industrial processes	10.11	9.90	10.32	10.63	11.47	11.87	17.4	3.5	12.9	13.7
3. Solvent and other product use	0.51	0.42	0.43	0.38	0.39	0.39	–24.1	0.3	0.7	0.4
4. Agriculture	8.56	8.72	7.90	7.40	7.50	7.63	–10.8	1.8	10.9	8.8
5. LULUCF	–13.14	–16.12	–17.15	–17.33	–17.39	–17.34	31.9	–0.3	–16.8	–20.0
6. Waste	3.59	3.11	2.57	2.32	2.14	2.02	–43.6	–5.6	4.6	2.3
7. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GHG total with LULUCF	65.03	63.70	63.14	75.58	69.57	69.30	6.6	–0.4	NA	NA
GHG total without LULUCF	78.17	79.82	80.30	92.92	86.96	86.64	10.8	–0.4	100.0	100.0

Data source: GHG emissions data: Austria's 2010 greenhouse gas inventory submission, common reporting format version 3.2, submitted on 4 November 2010.

Note: The changes in emissions and the shares by sector are calculated using the exact (not rounded) values and may therefore differ from values calculated with the rounded numbers provided in the table.

Abbreviations: GHG = greenhouse gas, LULUCF = land use, land-use change and forestry, NA= not applicable.

^a The shares of sectors are calculated relative to GHG emissions without LULUCF; for the LULUCF sector, the negative values indicate the share of GHG emissions that was offset by GHG removals through LULUCF.

20. Total GHG emissions excluding net emissions or removals from LULUCF increased by 10.8 per cent between 1990 and 2008, whereas total GHG emissions including net emissions or removals from LULUCF increased by 6.6 per cent. The increase in GHG

emissions was mainly driven by the 18.6 per cent increase in CO₂ emissions over this period, which was mainly due to an increase in emissions from transport. CO₂ emissions increased most between 1994 and 1996 (by 10.6 per cent) and between 2000 and 2005 (by 21.2 per cent). CO₂ emissions have decreased since 2005 (by 7.7 per cent from 2005 to 2008), due to decreases in emissions from public electricity production, road transport and the residential and commercial sectors. Between 1990 and 2008, emissions of methane (CH₄) decreased by 31.2 per cent, mainly due to improvements in solid waste management (reducing the amount of biodegradable waste deposited in landfills and increasing CH₄ recovery), while emissions of nitrous oxide (N₂O) decreased by 8.3 per cent, due to a decrease in emissions from chemical industry (as a result of N₂O abatement measures) and from agriculture (reduced use of mineral fertilizers). Emissions of fluorinated gases (F-gases) accounted for 2.0 per cent of total GHG emissions in 1990 and 1.9 per cent in 2008. An analysis of the key drivers of GHG emission trends in each sector is provided in chapter II.B of this report.

2. National system

21. In accordance with decision 15/CMP.1, Austria has provided in its NC5 a general description of its national system. The NC5 provides a reference to the detailed description of the national system in the initial report. The national system remains unchanged compared with the description given in that report.

22. The NC5 describes Austria's legislative arrangements and administrative procedures that seek to ensure that the implementation of activities under Article 3, paragraph 3, of the Kyoto Protocol also contributes to the conservation of biodiversity and sustainable use of natural resources.⁶ Sustainable forest management is one of the principles of Austria's Climate Strategy. The Austrian Forest Act sets the principle of sustainable management of forests and provisions for reforestation. Laws on nature conservation and landscape protection and on national parks have been enacted at the provincial level. The Austria Forest Programme adopted in 2007 includes seven thematic areas with 28 principles and 66 sets of measures. Forest biodiversity is one of those seven thematic areas and includes four principles and 10 sets of measures.

23. During the review, Austria provided further information on: the national system, elaborating on the institutional and legislative arrangements and administrative procedures for GHG inventory planning, preparation and management; the timeline of inventory preparation and reporting; and the implementation of the Kyoto Protocol. Austria reported that it has continuously improved its national system by: developing, updating and improving methods, activity data and emission factors for the GHG inventory; strengthening the quality management system for the GHG inventory; and developing the technical competence, independence, impartiality and integrity of the staff involved in GHG inventory preparation and management. The ERT noted the positive conclusions resulting from a comprehensive external audit that took place on 13–14 January 2011: the audit acknowledged that the quality management plan was known by the staff and fully supported by the managers, and that the staff competence was very high.

24. The ERT took note of the conclusion of the report of the individual review of the 2009 annual submission of Austria.⁷ The ERT concluded that the national system continued to perform its required functions as set out in decision 19/CMP.1.

⁶ Austria has not elected any activity under Article 3, paragraph 4, of the Kyoto Protocol.

⁷ FCCC/ARR/2009/AUT.

3. National registry

25. In its NC5, Austria has provided a reference to the detailed description of the national registry in the initial report and in its 2008 and 2009 annual submissions. During the review, Austria provided a reference to the changes in its national registry described in its 2010 annual submission. These changes related to the conformity with data exchange standards, publicly available information and test procedures.

26. During the review, Austria provided additional information on the security measures put in place to safeguard, maintain and recover registry data, to prevent unauthorized manipulations and to protect the registry against security compromises. Austria also informed the ERT about the performance test of the current version of the national registry and on the recording of the changes and discrepancies of the national registry. In response to questions raised by the ERT, Austria provided documents demonstrating how it records the changes related to the national registry and how it maintains these records. The ERT noted that updates of databases and applications, implemented security measures and changes to the national registry software are documented on a regular basis by nominated responsible staff.

27. The ERT took note of the conclusion of the standard independent assessment report that the national registry continues to perform the functions set out in the annex to decision 13/CMP.1 and the annex to decision 5/CMP.1, and continues to adhere to the technical standards for data exchange between registry systems in accordance with decisions 16/CP.10 and 12/CMP.1.

28. The ERT noted that the national registry experienced serious security problems in January 2011. During the review, Austria informed the ERT that additional higher-level security measures are being implemented. The ERT recommends that Austria pursue the implementation of these security measures to prevent and resolve unauthorized manipulations in accordance with paragraph 115(e) of decision 22/CMP.1.

B. Policies and measures, including those in accordance with Article 2 of the Kyoto Protocol

29. Austria has provided in its NC5 comprehensive and well-organized information on the PaMs implemented, adopted and planned at the national level (including related EU legislation) and at the provincial level in order to fulfil its commitments under the Convention and its Kyoto Protocol. Each sector has its own textual description of the principal PaMs, and a table summarizes the PaMs in all sectors. Austria has also provided information on how it believes its PaMs are modifying longer-term trends in anthropogenic GHG emissions and removals, consistent with the objective of the Convention, by providing details of GHG reduction effects for several individual PaMs for 2010, 2015 and 2020. The NC5 contains, with a few exceptions, a similar set of PaMs to those in the NC4.

30. The ERT noted that for the solvent and other product use sector the NC5 provides information on PaMs in the overview table, but no textual description. During the review, Austria explained that these PaMs were regarded as less important as they focused on broader environmental aims. The ERT encourages Austria to include such textual description in the next national communication. The ERT noted that some of the recommendations made in the previous review report had been addressed by the Party. These include, when applicable, the reference to legal acts and texts, and the improved transparency of the status of the PaMs in the agriculture sector.

31. The NC5 identifies the European Union emissions trading scheme (EU ETS) and the Domestic Environmental Support Scheme (DESS) as the most important cross-cutting

PaMs. The key framework climate and energy policies are the Climate Strategy, the Energy Strategy (presented to the public in 2010 but not adopted by the Government) and the Climate Act (under preparation). The ERT noted that, except for the EU ETS, most of the PaMs in the portfolio are based on economic incentives, namely subsidies, and standards, such as the energy efficiency standards for buildings and electrical appliances.

32. The EU ETS covered 37 per cent of national total GHG emissions in 2008. The ERT noted that, while keeping almost constant the number of installations covered for the first and second phases of the EU ETS, the annual emission allocation for the EU ETS sector was slightly reduced (from 33 Mt CO₂ eq in 2005–2007 to 30.7 Mt CO₂ eq in 2008–2012). Verified emissions in 2009 (27.3 Mt CO₂ eq) were lower than the allocation, mainly due to the decrease in production in the manufacturing sector as a result of the global financial crisis.

33. DESS subsidizes the implementation of environmentally sound projects by companies and households. Projects in the areas of energy efficiency, GHG emission reduction and protection of the environment are eligible. In general, the subsidy covers up to 30 per cent of the environment-related investment costs. Austria considers the performance of DESS to be satisfactory and as a result, since the programme was launched in 2004, the annual budget of DESS has been continuously increased. In the period 2004–2007, EUR 274 million were provided to subsidize more than 7,600 projects in the energy supply, residential and commercial energy demand, industry, transport, waste and agriculture sectors, saving 2.7 Mt CO₂ eq annually. In 2008, EUR 82 million in subsidies were used to finance 2,600 projects. EUR 90 million annually have been budgeted for 2010 and 2011.

34. The NC5 provides estimates of the effects of several individual PaMs, excluding cross-cutting PaMs. The effect of several adopted and implemented PaMs and the aggregated effect of planned PaMs are presented for 2010, 2015 and 2020. During the review, Austria briefly described the overlap and synergies among different PaMs and highlighted the challenges in quantifying these factors and thus estimating the aggregated effect of the adopted and implemented PaMs per sector. The ERT reiterates the encouragement stated in the review report of the previous national communication that the effect of all adopted, implemented and planned PaMs be estimated. Regarding costs, the NC5 reports the investment costs and subsidies received for several PaMs, mainly in the energy supply and energy demand sectors. Table 3 provides a summary of the reported information on the PaMs of Austria.

35. The NC5 indicates that the EU ETS could result in the shift of industrial production from some industrial plants in the EU to plants outside the EU and, depending on the specific plants, this shift could potentially increase global GHG emissions. Free emission allocation addresses this risk for the most vulnerable industries. The NC5 also indicates that ‘fuel export in the vehicle tank’ has increased GHG emissions attributed to Austria but it has also increased the revenue from fuel taxation. During the review, Austria indicated that fuel price increases in 2007 and 2011 are expected to reduce the effect of fuel export in the vehicle tank. The ERT encourages Austria to include further information in its next national communication on the PaMs that could lead to increased GHG emissions.

Table 3
Summary of information on policies and measures

<i>Major policies and measures</i>	<i>Examples/comments</i>
<i>Policy framework and cross-sectoral measures</i>	
The Climate and Energy Strategies	The Climate Strategy (adopted in 2002, revised in 2007), the Energy Strategy (presented in 2010 but not adopted) and the Climate Act (under preparation) constitute the climate policy framework
Subsidies for renewable energy and energy efficiency	The Domestic Environmental Support Scheme (DESS) subsidizes 30 per cent of the investment costs of measures that increase energy efficiency or the use of renewable energy. Projects in the energy supply, energy demand and industry sectors have benefited
European Union emissions trading scheme (EU ETS)	The EU ETS applies to around 200 plants in Austria in the energy supply and industry sectors, which generated 37 per cent of Austria's emissions in 2008
<i>Energy demand (residential and commercial)</i>	
Policies and measures (PaMs) to promote renewable energy	Provincial and federal subsidies are available for using renewable energy sources for space heating and hot water in new and existing buildings
PaMs to promote energy efficiency	A mix of subsidies and higher mandatory standards, such as the Energy Efficiency Action Plan and klima:aktiv (a cross-cutting initiative to promote the use of climate-friendly technologies and services in the energy sector), focus on measures such as insulating buildings and improving the efficiency of heating systems, domestic appliances and lighting in new and existing buildings. An additional EUR 100 million programme to improve thermal insulation was launched in April 2009
<i>Energy supply</i>	
Renewable energy	Renewable energy is supported by the Green Electricity Act (feed-in tariff to raise the electricity produced from renewable energy to 15 per cent of the total by 2015), DESS (EUR 93 million in subsidies in 2004–2007) and the Climate and Energy Fund (KLI.EN; subsidies for investment and research in renewable energy and energy efficiency: EUR 50 million in 2007 and EUR 150 million in 2008)
Energy efficiency	In 2007, EUR 55 million were allocated for subsidies to expand the production and use of combined heat and power. In addition, in 2008 the European Union (EU) directive to promote cogeneration (directive 2004/8/EC) was transposed into Austrian legislation The Energy Efficiency Action Plan and the EU ETS contribute to increasing the energy efficiency of the energy supply sector
<i>Transport</i>	
Biofuels	The EU biofuels directive (directive 2003/30/EC) set a minimum energy content of 2 per cent from biofuels in petrol and diesel for transport by 31 December 2005 and of 5.75 per cent by 31 December 2010
Transport efficiency	PaMs in this sector aim to increase the efficiency of the fleet (by ecolabelling and fuel consumption based taxation) and of operations (by ecomobility, reduction in the speed limits and increased enforcement, and improved traffic control). Fuel export in the vehicle tank is addressed by fuel price increases

<i>Major policies and measures</i>	<i>Examples/comments</i>
Modal shift and raising awareness	Measures to shift passenger and freight transport to more sustainable means of transport include new and improved infrastructure, public transport and mobility management. The klima:aktiv mobil support programme, one of the main PaMs, provides incentives and financial support for companies, communities and associations to use alternative, low-carbon fuels and propulsion systems; it also includes media campaigns to promote a modal shift towards lower-emission vehicles, such as the electric bicycle or electric cars, and public transport
<i>Industrial processes</i>	
Fluorinated gases (F-gases): leakage reduction and phase-out	The Austrian Ordinance on F-gases (adopted in 2002 and amended in 2007 to include EU legislation) aims to reduce and phase out the use of F-gases. In addition, public procurement guidelines for appliances or construction services add market incentives
Energy efficiency	The subsidies of DESS and the price on greenhouse gas emissions of the EU ETS provide incentives to increase energy efficiency in industry
<i>Agriculture</i>	
Environmentally sound agriculture, CO ₂ sequestration, N ₂ O avoidance and promotion of bioenergy	Most of the PaMs are under the European Union Common Agricultural Policy (EU CAP). The EU CAP and associated domestic regulations affect manure management, grassland maintenance, use of nitrogen fertilizers, the humus content of soil and emissions from cattle. Agriculture will play an important role in the production of biomass for energy purposes (although most of the biofuel for transport will be imported) and biogas generation under the Green Electricity Act
<i>Forestry</i>	
Maintenance and extension of vital forests	Forests supply renewable energy resources and raw materials while ensuring that the biodiversity, productivity, regeneration, capacity and vitality of forests is maintained
<i>Waste</i>	
Reduction of CH ₄ emissions from solid waste and wastewater, and energy recovery	Austria's fifth national communication does not present any new policy or measure compared with those presented in the fourth national communication. The Austrian Waste Management Act (2002) amended the Landfill Ordinances and, as a result, the deposition of untreated biodegradable waste has been forbidden since 2004 and landfill gas collection has been mandatory at all landfills since 2004. In addition, higher deposition costs, waste incineration and guidelines for the mechanical and biological treatment of waste contributed to a reduction in emissions

1. Policy framework and cross-sectoral measures

36. FMAFEWM coordinates the overall development of climate change policy in Austria. The jurisdiction for the implementation of GHG emission reduction measures is distributed among several federal ministries, provinces and municipalities. To strengthen the coordination of the planning, development and implementation of the PaMs, two inter-institutional groups have been established: the Kyoto Forum, where the provinces and the federal administration meet regularly and, when necessary, create working groups of experts for specific issues; and the Inter-Ministerial Committee to Coordinate Measures to Protect Global Climate, which brings together representatives of the relevant federal

ministries, the social partners (representatives of business, industry and agriculture) and the provinces.

37. The federal administrative structure devolves the decision-making to the federal, provincial and local levels. Both the federation and the provinces can enact climate-related legislation, whereas administrative measures, such as permits, are developed at all three levels. The ERT noted that the distribution of responsibilities for the development and implementation of PaMs across different levels of the administration requires effective monitoring of the PaMs across these levels, which is yet to be put in place. The ERT also noted that, with the exception of the effects of building standards in housing (where a common reporting tool exists), reporting on the implementation and effects of PaMs at the provincial level is not standardized. During the review, Austria indicated that the Climate Act would include requirements for the provinces to report on the PaMs in place and their effect on GHG emissions in a common format, which would enable comparison across the provinces and more accurate assessment of the effect of PaMs at the federal level. Austria may wish to report on the improved monitoring system of PaMs in its next national communication.

38. There are three prominent national strategic documents that define the climate-related PaMs: the Climate Strategy, the Energy Strategy and the Climate Act. The Climate Strategy (adopted in 2002 and revised in 2007) is the defining document shaping Austria's climate policy. It identifies Austria's measures to meet its target under the Kyoto Protocol, including a significant extension of the joint implementation (JI)/clean development mechanism (CDM) Programme, and sectoral targets for GHG emissions. Currently, Austria is developing a Climate Act, which will include mid- and long-term climate strategies and establish both the sectoral GHG emissions reduction targets for 2013–2020 and a compliance mechanism with penalties for not meeting them. The Energy Strategy, presented to the public in 2010 but not approved by the Government, aims to stabilize energy consumption in 2020 at the level of 2005, which means a reduction of 200 PJ for that year compared with the projections. To achieve this target, additional PaMs will be introduced, especially in the areas of transport, space heating, energy efficiency and promotion of renewable energy sources. The ERT noted that both the Climate Strategy and the Energy Strategy are strategic documents, thus not legally binding, so the PaMs contained therein may not be implemented.

39. Based on the EU renewable energy directive (directive 2009/28/EC), Austria has a target for the share of renewable energy sources in gross final energy consumption of 34 per cent in 2020. In 2009, the share amounted to 28 per cent; the remainder will be achieved through increased use of biomass (solid, liquid and gas), hydropower, wind power, solar power and geothermal power production. The Green Electricity Act, a key element to achieve this target, establishes feed-in tariffs and sets further framework conditions for power generated from renewable energy sources. The Act was updated in 2010 to further incentivize power production from renewable energy sources (see para. 49 below).

40. Under the EU effort-sharing decision (decision 406/2009/EC), Austria has agreed to reduce its emissions from the sectors not covered by the EU ETS by 16 per cent between 2005 and 2020. In its Energy Strategy, Austria has envisaged an emission reduction of 18 per cent by 2020 compared with the 2005 level. In addition to the measures already in place, the planned measures in the strategy include: increased energy taxation (also for transport fuels); increased share of biofuels and electric mobility in transport; accelerated thermal renovation of buildings; increased use of renewable energy for heating and hot water; increased use of biomass for district heating; and improvements to the Green Electricity Act.

2. Policies and measures in the energy sector

41. Between 1990 and 2008, GHG emissions from the energy sector increased by 16.8 per cent (9.32 Mt CO₂ eq). The GHG emission trends in the subsectors differ: while GHG emissions from the transport sector increased by 60.8 per cent, and from the manufacturing industries and construction sector by 26.5 per cent, emissions from the residential and commercial sector (heating and hot water) decreased by 16.9 per cent and from the energy industries sector decreased by 2.3 per cent. Table 2 provides an overview of GHG emissions by sector from 1990 to 2008.

42. The reduction in emissions from the energy industries sector can be attributed to an increase in the share of renewable energy, such as the increase of biomass use in district heating (from 8 per cent in 1990 to 41 per cent in 2007), the decrease in carbon intensity of power generation (from 68 t CO₂/TJ in 1990 to 54 t CO₂/TJ in 2007) and electricity imports. Emissions from the residential and commercial sector decreased, among other reasons, because the final energy consumption per m² decreased by 12.5 per cent between 1990 and 2007, despite an increase in the number of dwellings (from 2.9 to 3.5 million). In addition, emissions from the energy industries sector were lower, due to the decrease in the use of fuel for space heating due to milder winters and higher oil prices.

43. The increase in GHG emissions from the manufacturing and construction industry is due to an increase in production, especially in the metal and cement industries. In 2008, 90 per cent of the emissions from the manufacturing and construction industry (fuel combustion and CO₂ process emissions) were covered by the EU ETS. GHG emissions increased every year between 2005 and 2008 from plants under the EU ETS.

44. The increase in transport emissions reflected the increase in the number of person kilometres travelled in passenger transport growth of 25.3 per cent between 1990 and 2007), while the tonne kilometres travelled in freight transport nearly doubled (96.9 per cent increase) in the same period. Austria has estimated that about 25 per cent of the GHG emissions from the transport sector in 2008 can be attributed to fuel export in the vehicle tank, two thirds of it in heavy duty vehicles, given Austria's geographical situation as a transit country, lower fuel prices compared with the neighbouring countries and its strong economic interconnections in the region. However, during the review Austria reported that fuel export in the vehicle tank peaked in 2005 and has declined ever since, and that the declining trend is likely to continue, as a result of the increases in fuel prices implemented in 2007 and 2011. The ERT noted that the trend of increasing GHG emissions from the transport sector changed in 2005, when emissions peaked, and the emissions have been decreasing ever since.

45. The EU ETS applies to around 200 plants in Austria in the energy supply and industry sectors, which generated 37 per cent of Austria's emissions in 2008. In the energy supply sector, the emissions in the period 2005–2007 (39.7 Mt CO₂ eq) were 5.9 per cent higher than the allocation (12.5 million annually), while in 2008 emissions (11.8 Mt CO₂ eq) were 5.4 per cent higher than the allocation despite a reduction in the allocation (11.2 million annually). In the industry sector, overallocation occurred in the period 2005–2007 (61.5 million allowances compared with 57.9 Mt CO₂ eq emissions), while in 2008 emissions (20.2 Mt CO₂ eq) exceeded the allocation (19.6 million) by 3.1 per cent.

46. The initiative klima:aktiv is a cross-cutting initiative in the energy sector to promote the use of environmentally sound technologies and services in the areas of transport, energy efficiency, renewable energy and building stock. The klima:aktiv initiative helps households and companies to identify the most energy-efficient equipment by providing advice, quality standards and benchmarks, and facilitating access to the information. The initiative also provides training and qualifications. It is considered a success story by Austria and it has already been replicated by another country (Germany). During the

review, Austria stated that the success factors include involving all relevant stakeholders, tailoring the measure to the target sectors and providing technical assistance.

47. **Energy supply.** The NC5 reports that in 2007 primary energy supply was dominated by oil (42 per cent, of which around three quarters is related to fuel use in the transport sector), followed by gas and coal (21 per cent and 12 per cent, respectively). The remaining 25 per cent was provided by renewable energy sources (9.3 per cent by domestic hydropower). During the review, Austria explained that the share of renewable energy sources in primary energy supply was 28 per cent in 2009 and that Austria was well on track to meet its 2020 target of 34 per cent.

48. PaMs in the energy supply subsector include DESS and the Climate and Energy Fund, providing financing for projects or programmes aiming to increase the use of renewable energy technologies. A further measure is the promotion of combined heat and power through the requirements of the EU directive on cogeneration (directive 2004/8/EC). In 1990, public cogeneration plants provided around 6.6 TWh heat (54 per cent of the heat provided by public plants), while in 2008 they produced around 11 TWh heat (67 per cent of the total). The planned PaMs are estimated to result in emission reductions in the order of 0.76 Tg CO₂ eq in 2010.

49. **Renewable energy sources.** The Green Electricity Act, a feed in tariff scheme, encourages the use of renewable energy. The Act is the implementation of EU renewable energy directive 2001/77/EC and its amendments (directive 2009/28/EC). The tariffs were increased in 2010, but the budget for 2011 (EUR 20 million) was already spent by February 2011. Austria had previously experienced the sensitivity of the market to the tariffs established by the scheme: the power produced from renewable energy sources boomed from 500 GWh in 2003 to 4,000 GWh in 2007, but flattened thereafter. In 2008, wind and biomass combustion had a similar share in the production of power of around 1,900 GWh each, while biogas contributed the balance. During the review, Austria indicated that the tariff increases in 2010 are expected to add 3,760 GWh in 2015.

50. **Energy efficiency.** The PaMs targeting energy efficiency address the residential and commercial sector and the manufacturing sector. The Energy Efficiency Action Plan for the residential and commercial sector has been set up, based on the EU directive on energy end-use efficiency and energy services (directive 2006/32/EC). The plan targets the reduction of power consumption and aims to achieve power savings of around 4800 TJ in 2016. The klima:aktiv initiative subsidizes energy-efficient projects in households (see para. 46 above) and DESS does the same in industry. The Energy Strategy foresees further measures such as tax incentives for energy-efficient equipment and measures for the introduction of energy-efficient information technology by 2020. In the NC5, the planned PaMs targeting energy demand are estimated to result in emission reductions in the order of 0.02 Mt CO₂ eq in 2010.

51. **Residential and commercial sectors.** The PaMs reported in the NC5 include higher minimum thermal standards for buildings (both existing and new) and incentives for replacing inefficient heating systems. The PaMs are partly Austria's own initiative as well as the result of the implementation of EU common and coordinated PaMs, such as the directive on the energy performance of buildings (directive 2002/91/EC). The implementation of the EU directive on ecodesign (directive 2009/125/EC) targets the installation of efficient boilers and heating equipment and the information available to consumers on the energy consumption of domestic appliances. The Energy Strategy contains further PaMs, such as legal changes to address the frequently opposing interests of tenants and owners in the rehabilitation of residential buildings. Klima:aktiv is also active in this sector (see para. 46 above).

52. **Transport sector.** The PaMs in the transport sector aim to stabilize and reverse the increasing trend in emissions from transport using a mix of different instruments. The PaMs listed in the NC5 include: mandatory standards for CO₂ emissions from passenger cars (EU directive 1999/94/EC), increased fuel taxation, a car registration tax based on fuel consumption and the promotion of biofuels (EU directive 2003/30/EC). The initiative klima:aktiv mobil provides financial support for, and consultation free of charge on, mobility management for companies, communities and associations that prove that these measures and binding covenants have reduced CO₂ emissions. The financial support applies to investment, operation and planning costs. Klima:aktiv mobil includes information campaigns on cycling and electric bicycles, ecodriving, electric mobility, alternative vehicles and renewable fuels, and public transport. It also includes training and certification for the efficient driving of cars, trucks, buses and tractors. Austria has estimated that klima:aktiv mobil has reduced emissions by 0.25–0.40 Mt CO₂ eq annually in collaboration with 1,300 partners, with EUR 38 million in subsidies mobilizing EUR 239 million of total investment. The PaMs planned in the NC5 are estimated to result in emission reductions in the order of 0.16 Tg CO₂ eq in 2010.

53. In 2008, biofuels constituted 5.75 per cent of the total amount of energy consumed as transport fuel, while the EU directive on biofuels (directive 2003/30/EC) demanded only 2 per cent. During the review, Austria explained that the overachievement can be attributed to the considerable potential for using biofuels, including bioethanol and biodiesel, that Austria has due to its high-yield agricultural production. Austria reported that in 2009 7 per cent of the energy content of transport fuel was from biofuels. The Energy Strategy includes further PaMs, such as the support of electric-based mobility through research, pilot projects in several regions, the development of charging infrastructure, subsidies and fiscal incentives for fleet operators for switching to alternative propulsion systems (like hybrid vehicles and battery-powered electric vehicles) or renewable fuels, and awareness-raising. During the review, the ERT noted that the target in the Energy Strategy for the number of electric cars in 2020 (250,000, including battery-powered electric vehicles and plug-in hybrid vehicles) is much higher than the number in 2010 (400 battery-powered electric vehicles and no plug-in hybrid vehicles), and that it is uncertain whether there are enough incentives in place or planned to achieve this target.

54. The only measure directly addressing international bunker fuels is the EU ETS, which will include aviation from 2012 onward. There are no PaMs addressing international shipping, as emissions from international shipping are small and limited to transportation on the Danube river. Austria supports the work of the International Civil Aviation Organization and the International Maritime Organization to address GHG emissions from aviation and shipping.

55. **Industrial sector.** The EU ETS covers most of the emissions from fuel combustion in this sector. In addition, other PaMs in this sector relate to improvements in energy efficiency (see para. 50 above) and a shift from coal to gas or renewable energy. The NC5 does not contain planned PaMs for the industrial sector.

3. Policies and measures in other sectors

56. In 1990, the combined GHG emissions from all non-energy sectors amounted to 22.8 Mt CO₂ eq (29 per cent of the national total). Between 1990 and 2008, these emissions decreased by 3.7 per cent, mainly driven by decreases in emissions from the waste management and agriculture sectors.

57. **Industrial processes.** Between 1990 and 2008, GHG emissions from the industrial processes sector increased by 17.4 per cent. The key driver for the rise in emissions from the industrial processes sector is the dramatic increase in the consumption of halocarbons and sulphur hexafluoride (SF₆), from which emissions increased by 444 per cent. Emissions

from metal production and mineral products also increased (by 15.1 and 7.8 per cent, respectively), due mainly to an increase in stainless steel and cement production, while emissions from chemical industry decreased by 38.0 per cent, as a result of N₂O abatement measures. The most relevant subsector within the industrial processes sector is still metal production, accounting for 48.8 per cent of the sectoral emissions in 2008. Regarding the solvent and other product use sector, emissions decreased by 24.1 per cent, with the decrease in emissions from paint application and from manufacture and processing of chemical products being the main drivers.

58. The main PaMs in the industrial processes sector affect F-gases. They include legislation banning and phasing out hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and SF₆ (Austrian Ordinance on F-gases) as well as public procurement and support measures. At the EU level, two relevant regulations exist and have been implemented in Austria: one addresses labelling, handling and the destruction of fluorinated GHGs (regulation 842/2006) and the other the use of R-134a as a cooling agent in car air-conditioning systems (directive 2006/40/EC). There are no planned PaMs reported in the NC5 regarding F-gases.

59. *Solvent and other product use.* The NC5 includes six adopted and implemented PaMs in this sector in a table. These six PaMs mostly address methane and non-methane volatile organic compounds, but they are not described in the text of the NC5. Their impact on GHG emissions is not quantified and there are no planned PaMs for this sector.

60. *Agriculture.* Between 1990 and 2008, GHG emissions from the agriculture sector decreased by 10.8 per cent (from 511 to 388 Mt CO₂ eq), mainly driven by the steady decline in the number of animals (particularly cows), the considerable reduction of manure disposal and the reduced use of mineral fertilizers. The NC5 identifies three key PaMs in the agriculture sector: the European Union Common Agriculture Policy, which includes mandatory manure management standards in its latest revision (2009); the Austrian Rural Development Programme (ÖPUL), with actions addressing nitrogen fertilizers, manure management and reducing emissions from cattle; and the EU biofuels directive, which supports sustainable agriculture. As a result of the implementation of these PaMs, the number of organic farms in Austria increased from 1,500 in 1990 to nearly 20,000 in 2007, and more than 10 per cent of arable lands in 2007 were managed according to organic criteria. Three quarters of all agricultural companies are currently participating in ÖPUL, resulting in a reduction in the use of fertilizers, an increase in the application of organic methods and an expansion of crop rotation. The NC5 does not quantify individually the effect of the PaMs on GHG emissions. The effect of planned PaMs is negligible, amounting to a 0.04 Mt CO₂ eq reduction both in 2010 and 2020.

61. *LULUCF.* The LULUCF sector was a net sink of 17.4 Mt CO₂ eq in 2008; net GHG removals increased by 32 per cent between 1990 and 2008. The trend was mainly driven by an increase of the carbon stock in forest land. In Austria, forests are considered a key economic and ecological asset and are therefore managed in an economically sustainable manner to maintain biodiversity, productivity, regeneration capacity and vitality, as well as to improve their adaptation to climate change. As also mentioned in the NC4, the Austrian Forest Programme is currently the framework for forest management PaMs.

62. Austria selected commitment period accounting of GHG emissions by sources and removals by sinks for activities under Article 3, paragraph 3, of the Kyoto Protocol. A preliminary estimation of the effect of these activities is a net removal of 0.7 Tg CO₂ eq/year for the period 2008–2012. The ERT encourages Austria to refine its projection of GHG emissions by sources and removals by sinks under Article 3, paragraph 3, of the Kyoto Protocol in its next national communication. Austria has decided not to elect any of the activities under Article 3, paragraph 4, of the Kyoto Protocol (forest management, cropland and grassland management).

63. The increased utilization of wood as a renewable raw material and energy source is one of the goals of the Austrian Forest Programme. During the review, Austria reported that new data that will be considered in the 2012 annual submission show that the net GHG removal by sinks in the LULUCF sector has significantly decreased since 2003 and is projected to continue to decrease to a level between -2.9 Mt CO₂ eq (net removal) and 2.3 Mt CO₂ eq (net emissions) by 2020, mainly driven by increasing demand for biomass from the energy sector. The ERT noted that CO₂ emissions from biomass obtained from forest management used in the energy sector would be considered carbon neutral. The ERT also noted that, according to the projections for the first commitment period, Austria would have received the maximum amount of removal units up to the cap for forest management if it had elected to account for this activity under Article 3, paragraph 4, of the Kyoto Protocol, as the net sink is expected to exceed the cap.

64. **Waste management.** Between 1990 and 2008, GHG emissions from the waste sector decreased by 43.5 per cent (1.6 Mt CO₂ eq), mainly due to a reduction in the amount of biodegradable waste deposited in landfills and to the capture of CH₄, as required by EU and national legislation. The PaMs in the waste sector include mandatory treatment of biodegradable waste before deposition, collection of landfill gas, and guidelines for waste treatment. The PaMs aim at reducing the amount of generated waste, avoiding the deposition of biodegradable waste, and recycling and reusing waste. The NC5 does not quantify the effect of the implemented PaMs. Due to the declining trend in waste emissions, no further PaMs are planned.

4. Minimization of adverse effects in accordance with Article 2, paragraph 3, of the Kyoto Protocol

65. In its NC5, Austria has described how it strives to implement PaMs under Article 2 of the Kyoto Protocol in such a way as to minimize adverse effects, including the adverse effects of climate change and effects on international trade and social, environmental and economic impacts, on other Parties, especially developing country Parties. The NC5 indicates that the Kyoto Protocol is intrinsically minimizing those adverse effects, by: not limiting the action to a single gas or sector and including flexibility mechanisms; promoting sustainable development through, among others, the CDM; and specifically requesting support for the least developed countries. Austria minimizes those adverse effects by implementing all those features of the Kyoto Protocol. Further information on how Austria strives to implement its commitments under Article 3, paragraph 1, in such a way as to minimize adverse social, environmental and economic impacts on the developing country Parties, as reported in the 2010 annual submission, is presented in chapter II.I of this report.

C. Projections and the total effect of policies and measures, and complementarity relating to the Kyoto Protocol mechanisms

66. In its NC5, Austria has presented comprehensive information on its projections of GHG emissions, which were produced between 2008 and 2009. The information on emission projections by sector is generally transparent.

67. During the review, Austria presented information on the scenario definitions that are being used in the preparation of updated projections, although updated projections were not provided. The major differences between the projections in the NC5 and the updated projections under preparation are: a lower starting point for economic growth, taking account of the recession in 2009; slower economic growth over time; fewer heating degree days, due to the warmer climate considered; and greater transport fuel efficiency.

1. Projections overview, methodology and key assumptions

68. The GHG emission projections in the NC5 include a ‘with measures’ and a ‘with additional measures’ scenario until 2020, presented relative to actual inventory data for 1990, 1995, 2000, 2005, 2006 and 2007. Projections are presented on a sectoral basis, using the same sectoral categories used in the PaMs chapter of the NC5, and on a gas-by-gas basis for the following GHGs: CO₂, CH₄, N₂O, PFCs, HFCs and SF₆. Projections are provided in an aggregated format for each sector as well as for a national total, using global warming potential values.

69. However, the ERT noted that Austria has not provided emission projections related to fuel sold to ships and aircraft engaged in international transport, as required by the UNFCCC reporting guidelines. The ERT recommends that Austria provide these projections in its next national communication. The NC5 provides emission projections by gas for each sector, but does not provide aggregation of these projections by gas at the national level. The ERT recommends that Austria provide complete information in the projections chapter of its next national communication.

70. The ERT noted that, in the NC5, the projections of emissions and removals from the LULUCF sector are not always transparent and are not presented relative to historical data. The only available projections are for the forest land remaining forest land subcategory and the four scenarios presented do not follow the scenario definition contained in the UNFCCC reporting guidelines. To improve the clarity of its reporting of these projections in its next national communication, Austria may wish to report data measured in m³ for wood and t CO₂ separately, and to clearly state which of the given scenarios is considered the best projection and which are shown for the purposes of sensitivity analysis. The ERT recommends that Austria present its projections for the LULUCF sector relative to actual inventory data and complete the coverage of the projections.

71. Austria has defined the ‘with measures’ scenario as including the effect of all implemented and adopted climate change policies as at 8 August 2008. It includes the effect of the EU ETS, which is modelled using a carbon price (around EUR 20/t CO₂ eq), but does not include the levels of allocated emissions according to the national allocation plan. The ‘with additional measures’ scenario includes the effect of additional measures in the energy, transport and agriculture sectors. A higher carbon price in the EU ETS (EUR 40/t CO₂ eq) is assumed in the ‘with additional measures’ scenario that reflects a greater scale of climate mitigation effort in Europe.

72. The methodology used to prepare the projections is described in the NC5. A combination of sector-specific models and expert judgement is used to forecast emissions. Emission projections for CO₂, CH₄, N₂O and F-gases are generally calculated by the Austrian Environment Agency with the assistance of other agencies.

73. The approach, assumptions and institutional arrangements in place to prepare GHG emission projections are generally consistent with those used for the projections in the NC4. The main differences relate to several new or updated models that have been used for the NC5 for the energy and transport sectors, improved coordination of the personnel involved, updated assumptions and input parameters, and additional policy changes since the projections in the NC4. The latest improvements to Austria’s inventory methodology and emission factors were also incorporated into the projections in the NC5.

74. For projections in the energy sector, a new transport demand model that was used for the NC5 has led to higher projected emissions from the transport sector compared with those reported in the NC4. For the NC4, waste emissions were forecast using a country-specific method, but for the NC5 Austria has switched to using the default GHG inventory tier 2 method for estimating inventory emissions, and projecting emissions in that way was found to be more accurate, resulting in lower emission forecasts for the waste sector in the

NC5. The ERT commends Austria for the transparency and completeness of its reporting of the models and methodologies used for its projections.

75. The PROMETHEUS macroeconomic model is the main model used to prepare projections of emissions from the energy sector (excluding transport), in conjunction with three more detailed subsector models: the Long-range Energy Alternatives Planning system for simulating demand for electric power, ERNSTL for simulating the space and water heating needs, and the optimization package BALMOREL that replaced a macroeconomic model used for the NC4 with a view to improving the possibilities to reflect within the model the effects of PaMs. Energy emissions are split into three subsectors: energy industries; residential and commercial; and manufacturing industries and construction.

76. Austria uses three models to project emissions from transport. The transport demand model is based on historical data going back to 1950, including population data, motorization rates, vehicle fleet sizes and economic statistics. Its results are used in two other models, which project emissions from road transportation (GLOBEMI) and off-road transport (GEORG). The projection of GHG emissions from domestic aviation is an extrapolation from historical trends.

77. Projections of emissions from industrial processes have been derived from total energy input, extrapolated from historical data, estimated from the additional need for the product, or calculated from the results of the macroeconomic energy model, with the method varying by subcategory. Projections of emissions from solvents and other products and emissions of F-gases have been extrapolated from projected population growth and projected annual stock of F-gases, respectively.

78. For agriculture, emission projections are produced by forecasting agricultural activity using the Positive Agriculture Sector Model Austria (PASMA) and then using the inventory methodology to convert activity data to emissions data. The PASMA model projects agricultural activity by assuming that landowners act to maximize profit.

79. Emissions and removals from the LULUCF sector are forecast using PROGNAUS (Prognosis for Austria), a yield and silvicultural science-based model. PROGNAUS uses the latest National Forest Inventory results as the basis of its carbon stock change projections for 2010, 2015 and 2020.

80. Waste emissions are forecast using a combination of expert judgement and the GHG inventory methodology. The quantities of waste deposited on land and wastewater handled are forecast by the Austrian Environment Agency, then the associated CH₄ and N₂O emissions are calculated from that input data using the inventory methods.

81. The NC5 presents key assumptions for 2010, 2015 and 2020 covering projected GDP, population, stock of dwellings, and coal, oil and gas prices. For comparison, historical data on GDP, population and the stock of dwellings are presented for 1990, 1995, 2000, 2005, 2006 and 2007. The ERT considered the assumptions to be generally robust and internally consistent, although Austria acknowledged that the emission projections in the NC5 are based on economic scenarios developed before the current global financial crisis. Austria reported during the review that the updated projections under preparation will include the effect of recent economic developments.

82. The NC5 presents analyses of the sensitivity of the emission projections to changes in the following: fuel prices (oil, natural gas and biomass); the difference in fuel prices between Austria and neighbouring countries; electricity demand; electricity imports; and the price of agricultural commodities. For public electricity, the manufacturing sectors and the agriculture sector, the results varied by less than 3 per cent for changes in the prices of natural gas, oil and agricultural commodities, the amount of electricity imported, or electricity demand. Emissions from the residential and commercial sector were somewhat

sensitive to the price of fossil fuels (a 30 per cent increase in prices led to a 13 per cent drop in emissions in 2020) and emissions from the transport sector varied by 6.7 per cent depending on the difference in fuel prices between Austria and neighbouring countries. The ERT noted that the NC5 did not include an analysis of the sensitivity of the projections to different rates of GDP growth as was suggested in the reports of the IDRs of both the third national communication and the NC4. The ERT also noted that such a sensitivity analysis would be included in the updated projections. The ERT encourages Austria to include such an analysis in future national communications.

2. Results of projections

83. Key results of Austria's GHG emission projections are provided in table 4 and the emission trends are illustrated in the figure below. Based on the projections in the NC5, Austria's emissions are expected to be above its Kyoto Protocol target under both the 'with measures' and the 'with additional measures' scenarios. Austria expects to meet its Kyoto Protocol target for the first commitment period through a combination of domestic efforts (PaMs and accounting for activities under Article 3, paragraph 3, of the Kyoto Protocol) and use of Kyoto units. According to the 'with measures' projections for 2010,⁸ Austria is projected to have an annual deficit of 25.1 Mt CO₂ eq compared with its Kyoto Protocol target.

Table 4

Summary of greenhouse gas emission projections for Austria

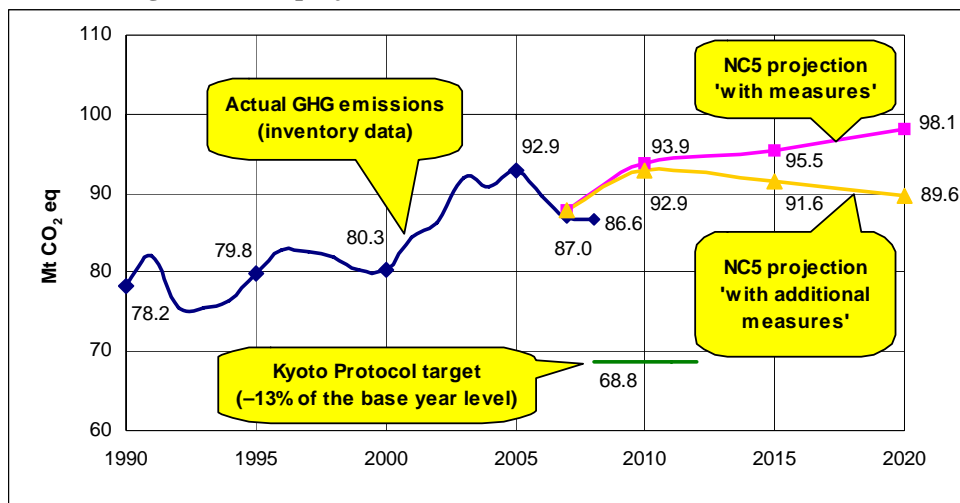
	<i>Greenhouse gas emissions (Tg CO₂ eq per year)</i>	<i>Changes in relation to base year level (%)</i>	<i>Changes in relation to 1990 level (%)</i>
Inventory data 1990	78.17	-1.1	-
Inventory data 2008	86.64	9.6	10.8
Kyoto Protocol base year	79.05	-	1.1
Kyoto Protocol target	68.77	-13.0	-12.0
'With measures' projections for 2010	93.87	18.7	20.1
'With additional measures' projections for 2010	92.87	17.5	18.8
'With measures' projections for 2020	98.11	24.1	25.5
'With additional measures' projections for 2020	89.61	13.4	14.6

Data sources: (1) Inventory data: Austria's 2010 greenhouse gas (GHG) inventory submission, common reporting format version 3.2, submitted on 4 November 2010; the emissions are without land use, land-use change and forestry (LULUCF); (2) Kyoto Protocol base year and target: Austria's initial review report, contained in document FCCC/IRR/2007/AUT; (3) Projections: Austria's fifth national communication.

Note: The projections are for GHG emissions without LULUCF.

⁸ The figures correspond to the emission projections for 2010, not to the annual average for the first commitment period of the Kyoto Protocol.

Greenhouse gas emission projections



Data sources: (1) Data for the years 1990–2008: Austria’s 2010 greenhouse gas inventory submission, common reporting format version 3.2, submitted on 4 November 2010; the emissions are without land use, land-use change and forestry (LULUCF); (2) Data for the years 2007–2020: Austria’s fifth national communication; the emissions are without LULUCF.

Abbreviations: GHG = greenhouse gases, NC5 = Austria’s fifth national communication.

84. To cover part of the gap to its Kyoto target, Austria expects to use both accounting for activities under Article 3, paragraph 3, of the Kyoto Protocol (estimated at 0.7 Mt CO₂ eq annually) and Kyoto mechanisms (12.1 Mt CO₂ eq annually: 3.1 Mt CO₂ eq from emissions trading and around 9 Mt CO₂ eq from project-based mechanisms). The NC5 states that the remaining gap of 12.3 Mt CO₂ eq is expected to be covered by the forceful implementation of additional PaMs.

85. However, the projected effect of planned PaMs under the ‘with additional measures’ scenario (1 Mt CO₂ eq) is not sufficient to close this gap. During the review, Austria acknowledged that the short time left to the end of the first commitment period makes it difficult to implement other additional PaMs. Therefore, it may need to use additional Kyoto units in order to meet its Kyoto target, although the formal decision has not been taken nor has additional budget been reserved for either of these options. Chapter II.C.4 of this report contains further information.

86. Similar to the trends in the past, future trends of the total GHG emissions are expected to be defined primarily by the trend in the CO₂ emissions. Indeed, under the ‘with measures’ scenario, CO₂ emissions are projected to rise by 30 per cent compared with the 1990 level in 2010 and by 37 per cent in 2020. CH₄ emissions are projected to decrease by 18 and 23 per cent, respectively, while N₂O emissions are projected to decrease by 19 and 21 per cent, respectively. F-gas emissions are projected to decrease by 11 per cent in 2010 but to rise and return to the 1990 level in 2020.

3. Total effect of policies and measures

87. In the NC5, Austria estimated the expected total effect of implemented and adopted PaMs and the total effect of additional planned PaMs. Information is presented in terms of GHG emissions avoided, by gas (on a CO₂ eq basis), in 2005, 2010, 2015 and 2020 (only 2010, 2015 and 2020 for the planned PaMs). The total effect of planned PaMs is estimated as the difference between the ‘with measures’ and the ‘with additional measures’ scenario. The total effect of implemented and adopted PaMs is estimated as the difference between

the ‘with measures’ and the ‘without measures’ scenario. However, the ‘without measures’ scenario was developed using an indicator approach, and the ERT noted that that approach does not separate autonomous efficiency improvements from those derived from PaMs, nor does it consider changes in behaviour because of PaMs, and therefore the effect of implemented and adopted PaMs may have been systematically overestimated. During the review, Austria acknowledged that the estimates are an upper limit on the total effect of PaMs. The ERT recommends that Austria improve the accuracy and transparency of its evaluation of the total effect of implemented and adopted PaMs in its next national communication, if possible through the preparation of a ‘without measures’ scenario.

88. The NC5 reports that the total estimated effect of adopted and implemented PaMs since 2000 is a reduction of 18.0 Mt CO₂ eq in 2010 and 34.8 Mt CO₂ eq in 2020. The aggregate effect of planned PaMs is a reduction of 1.0 and 8.5 Mt CO₂ eq in 2010 and 2020, respectively. According to calculations based on information reported in the NC5, additional PaMs implemented in the energy industries sector will deliver the largest emission reductions, followed by the effect of PaMs implemented in the transport and residential and commercial sectors. The most effective PaMs and drivers behind GHG emission reductions are described in chapter II.B.2 of this report. Table 5 provides an overview of the total effect of planned PaMs as reported by Austria.

89. Austria’s projected GHG emissions are dominated by emissions from the energy sector. Under the ‘with measures’ scenario, energy emissions are projected to rise by 31.3 per cent and 38.4 per cent in 2010 and 2020, respectively, from the 1990 level. Growing electricity demand is projected to push emissions from electricity and heat production up by 30.6 per cent and 38.0 per cent in 2010 and 2020, respectively, from the 1990 level. Transport emissions, approximately a third of total energy emissions, peaked in 2005 (78 per cent above the 1990 level), but after a decline during 2006–2008 they are projected to rise again: showing a 72 per cent and 88 per cent increase on the 1990 level by 2010 and 2020, respectively.

Table 5
Projected effects of planned policies and measures in 2010 and 2020

Sector	2010		2020	
	Effect of planned measures (Tg CO ₂ eq)	Relative value (% of 1990 emissions)	Effect of planned measures (Tg CO ₂ eq)	Relative value (% of 1990 emissions)
Energy (without CO ₂ from transport)	0.78	1.2	6.37	15.2
Transport – CO ₂	0.15	1.1	2.1	15.2
Industrial processes	NA	NA	NA	NA
Agriculture	0.07	0.8	0.03	0.3
Land-use change and forestry	NA	NA	NA	NA
Waste management	NA	NA	NA	NA
Total	1.00	1.1	8.50	8.7

Data source: Austria’s fifth national communication.

Note: The total effect of planned policies and measures is defined as the difference between the ‘with measures’ and ‘with additional measures’ scenarios.

Abbreviation: NA = not available.

90. Persistently lower fuel prices in Austria compared with in the surrounding countries contribute significantly to Austria’s transport emissions (see para. 44 above). Emissions from residential and commercial use of energy are projected to remain at the 1990 level in

2010 and to decrease by 12 per cent in 2020. Residential and commercial energy emissions are declining, despite a growing number of households and a growing population, due to greater energy efficiency and a shift away from fossil fuels for heating towards renewable energy sources such as biomass and solar heating.

91. Under the ‘with measures’ scenario, process emissions from industry and solvent use are projected to rise from the 1990 level by 13 per cent and 22 per cent in 2010 and 2020, respectively, driven by increasing emissions from metal production, mineral products and F-gases. Emissions from agriculture decreased steadily from 1995 to 2005 as livestock numbers fell, but emissions have stabilized since then. Agriculture emissions are projected to remain stable at around 9 per cent less than the 1990 level both in 2010 and 2020. Emissions from waste have fallen steadily since 1990 and are projected to continue falling from the 1990 level, by 47 per cent and 65 per cent in 2010 and 2020, respectively. This decline is due to the regulations relating to treatment of solid waste and landfill management. GHG emissions from wastewater handling are forecast to increase slightly, but this increase is expected to be offset by a larger drop in emissions from waste disposal on land.

92. The LULUCF sector strongly increased its sink capacity between 1990 and 2000 and net removals have remained at the 2000 level (17 Mt CO₂ eq) ever since. However, the average net removals under the four scenarios presented for the forest land remaining forest land subcategory (the major driver of the net removals from the LULUCF sector) are projected to fall to 3.3 Mt CO₂ in 2010 and to 0.4 Mt CO₂ in 2020. This trend is due to a projected increase in forest harvesting as biomass is increasingly used as a fuel for heating and electricity generation in Austria.

4. Supplementarity relating to mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol

93. The NC5 provides implicit information on how Austria’s use of Kyoto Protocol mechanisms is supplemental to domestic action, but it does not elaborate on supplementarity as such. To that end, the NC5 compares the planned use of Kyoto units to the projected total effects of PaMs (adopted and implemented, and planned) and the accounting for activities under Article 3, paragraph 3, of the Kyoto Protocol. During the review, Austria stated that it interpreted supplementarity as emission reductions resulting from domestic action being greater than the use of Kyoto units. Indeed, the NC5 estimates the total effect of implemented PaMs at a reduction of 18 Mt CO₂ eq/year and, in accordance with the current plans, Austria will acquire 12.1 Mt CO₂ eq Kyoto units annually (see para. 84 above). The ERT encourages Austria to include its definition of supplementarity in its next national communication.

94. Austria’s JI/CDM Programme, with a budget of EUR 531 million for 2003–2012, is estimated to provide 45 million Kyoto units in the period 2008–2012 to contribute to meet Austria’s Kyoto Protocol target. All the Kyoto units were already contracted by the end of 2010. Certified emission reductions (CERs) dominate in the purchasing portfolio (70 per cent), followed by emission reduction units and assigned amount units from green investment schemes (15 per cent each). The majority of the CERs originate from China (45 per cent) and Central or Eastern Asia (excluding China) (33 per cent). The ERT noted that the JI/CDM Programme applies strict sustainability criteria to the selection of projects, and that information on these criteria and the JI/CDM Programme itself is publicly available.

95. According to the NC5, Austria is not expected to meet its Kyoto Protocol target, even with the currently planned PaMs, use of accounting for activities under Article 3, paragraph 3, of the Kyoto Protocol and planned use of Kyoto mechanisms. The NC5 estimates at 11.3 Mt CO₂ eq annually the gap to the Kyoto target. During the review, Austria informed the ERT that this gap has decreased since the preparation of the

projections in the NC5 to less than 10 Mt CO₂ eq annually, due to the global economic recession in 2009.

96. The NC5 shows that Austria's use of Kyoto mechanisms is supplemental to domestic efforts, as the planned use of these mechanisms (12.1 Mt CO₂ eq annually) is significantly less than the emission reductions resulting from adopted, implemented and planned domestic efforts (19 Mt CO₂ eq annually). However, the ERT noted that this estimation of domestic effort uses a methodology that may systematically overestimate the effect of PaMs (see para. 87 above), and that the planned use of Kyoto units will leave Austria with a significant gap to its Kyoto Protocol target. If the remaining gap to the Kyoto target were closed by the use of additional Kyoto units, then the contribution of the use of mechanisms to meet the target could be greater than the domestic effort. The ERT recommends that Austria clearly quantify in its next national communication how it intends to meet its Kyoto Protocol target and show how the use of the Kyoto mechanisms is supplemental to domestic action.

D. Vulnerability assessment, climate change impacts and adaptation measures

97. In its NC5, Austria has provided the required information on the expected impacts of climate change in the country and on studies conducted for the evaluation of the status of adaptation measures, and has elaborated on the process and timeliness of the development of its national adaptation strategy (NAS).

98. The NC5, similar to the NC4, focuses primarily on vulnerability and impacts and to a lesser extent on adaptation measures. The ERT noted that Austria considers itself to be a country that is vulnerable to climate change, due to the sensitivity of its mountainous ecosystems. Mean average temperature records for the past 50 years show a 1–2 °C warming, while the share of snowfall in total precipitation has decreased even at high altitudes and glaciers have decreased in size and volume. Due to changes in intensity and frequency of precipitation, temperature increase, glacier retreat and degradation of mountain permafrost, the frequency of natural hazards such as landslides, mudslides and avalanches is expected to increase.

99. The main sectors which are considered to be vulnerable are agriculture, forestry, water management, tourism and the electricity industry. However, during the review, Austria informed the ERT that the impact and vulnerability assessments for several sectors, including ecosystems and biodiversity, were under development. The ERT encourages Austria to report on the results of these analyses in its next national communication and to provide updated and more structured information on the climate change impacts and vulnerability assessment. Table 6 summarizes the information on vulnerability and adaptation to climate change presented in the NC5.

Table 6
Summary of information on vulnerability and adaptation to climate change

<i>Vulnerable area</i>	<i>Examples/comments/adaptation measures reported</i>
Mountain cryosphere and winter tourism	<p><i>Vulnerability:</i> The ice thickness of the glaciers decreased between 1997 and 2006 in nearly all elevations in the Alps. The glaciers in Otztaler Alpen and Stubai Alpen have already lost about 15 per cent of their area. Changes in climate conditions will shorten the winter tourism season</p> <p><i>Adaptation:</i> Artificial snow on ski slopes can partially compensate for the decrease in snowfall but will increase water and electricity consumption. Increase in summer tourism</p>
Agriculture and food security	<p><i>Vulnerability:</i> A decrease in soil water availability is expected to affect crop production. The productivity of grassland-dominated regions will decrease due to increasing drought and heat. Agricultural productivity will be adversely affected by increased occurrence of pests, diseases and weeds, and extreme climate events</p> <p><i>Adaptation:</i> Shifting of seeding or changing the soil cultivation techniques (e.g. crop rotation) could help to mitigate water stress</p>
Biodiversity and natural ecosystems	<p><i>Vulnerability:</i> Research shows that climate change is already affecting alpine vegetation. The modelling predicts that in sensitive mountainous ecosystems up to 60 per cent of species will be lost</p>
Hydrology and hydropower	<p><i>Vulnerability:</i> The seasonal precipitation patterns are expected to shift, the number of days with snow cover will decrease and the flat areas will experience more severe hydrological conditions than the mountainous areas. Changes in the seasonal run-off patterns as a result of increased temperatures and evaporation are expected to affect the availability and quality of water for human consumption in some regions. The potential changes in run-off extremes can cause an increase in sediment deposition in reservoirs</p> <p><i>Adaptation:</i> Changes in the management of the annual balancing reservoirs can, to some extent, mitigate the altered influx conditions</p>
Forests	<p><i>Vulnerability:</i> Potential climate change may directly affect forest ecosystems and forests may be affected by insect outbreaks and/or fungi infections, particularly at altitudes below 1,000 m. A comprehensive study of forest impacts was completed in 2009, but its results are not reported in Austria's fifth national communication</p> <p><i>Adaptation:</i> A study conducted in 2009 developed adaptive forest management strategies for commercial forests in Austria</p>
Human health	<p><i>Vulnerability:</i> The interaction of heat waves, ozone and particulates increases the risks for human health. High temperatures and thermal stress increase cardiovascular and respiratory problems. Temperature increases are expected to spread seasonal malaria and leishmania</p>
Infrastructure and economy	<p><i>Vulnerability:</i> Climate change is expected to affect mountain agriculture, hydropower generation, commercial timber production, winter tourism, human health, property and insurance. Adverse living conditions due to climate change in other countries may induce unexpected population migration</p>

100. The ERT noted significant progress in the development of adaptation policy since the previous national communication. In particular, the development of the NAS is included in the federal government programme for 2008–2013 and is expected to be concluded at the beginning of 2012. During the review, Austria reported that the extreme climate events in

2010 highlighted the need for better coordination of adaptation measures across the economic sectors. In 2008, the status of adaptation activities in Austria was analysed and a public database on adaptation measures was created. The evolving policy paper entitled “Towards a national adaptation strategy”, with continuous public participation, published first in June 2009 and revised in October 2010, defines the scope and guiding principle of the future NAS. The paper also reflects the status of adaptation activities in Austria and includes a vulnerability assessment and options for adaptation measures for each sector. The ERT encourages Austria to provide, in its next national communication, updated information on progress with the approval and implementation of the NAS, including lessons learned.

101. The NC5 included information on cooperation with developing countries in preparing for adaptation pursuant to the Article 4, paragraph 1(e), of the Convention in the financial resources and technology transfer chapter. During the review, Austria reported on its collaboration on impact and vulnerability assessment in Antarctica and several mountainous areas, such as Kilimanjaro and the Andes. To improve transparency, Austria may wish to report on its cooperation with developing countries in the chapter of its NC5 on climate change impacts, vulnerability assessment and adaptation.

E. Financial resources and transfer of technology, including information under Articles 10 and 11 of the Kyoto Protocol

1. Provision of financial resources, including “new and additional” resources and resources under Article 11 of the Kyoto Protocol

102. The NC5 provides detailed information on measures taken to implement Austria’s commitments under Article 4, paragraphs 3, 4 and 5, of the Convention. The NC5 also provides detailed information on the assistance the Party has made available to developing countries that are particularly vulnerable to the adverse effects of climate change to help them meet the costs of adaptation to those adverse effects.

103. The NC5 provides information on the financial contributions to the Global Environment Facility (GEF) and indicates that these contributions are considered “new and additional”. During the review, Austria further clarified that all contributions to climate-related activities after the Convention entered into force are considered “new and additional”, including the EUR 120 million pledged under the fast-track financing for 2010–2012 in response to the Copenhagen Accord of 18 December 2009 (EUR 40.5 million were provided in 2010 through international financial institutions, including EUR 14 million to the GEF). The ERT recommends that Austria include its definition of “new and additional” funding in its next national communication.

104. The NC5 provides information on the financial assistance (bilateral, regional and other multilateral channels, including the GEF) related to the implementation of the Convention. Austria contributed EUR 36.2 million to the GEF in the period 2005–2008. During the review, Austria reported that EUR 3.75 million/year were allocated for 2009 and 2010. Austria’s contributions to the third and fourth replenishments of the GEF remain on a similar level, at around EUR 34 million. Austria has pledged EUR 42.6 million to the fifth replenishment of the GEF.

105. With regard to multilateral institutions, the NC5 reports the USD 1.7 million contributed to the UNFCCC Trust Funds and the Intergovernmental Panel on Climate Change (IPCC), and the USD 0.55 million contributed in 2007 to the Least Developed Countries Fund. No information was provided on contributions to the Adaptation Fund established in accordance with decision 10/CP.7. The ERT encourages Austria to report in the same chapter and with the appropriate level of detail, as was done in the NC4, its

contributions to multilateral institutions and programmes. Austria may wish to use table 4 of the UNFCCC reporting guidelines to report the information.

106. Austria's bilateral official development assistance (ODA) for climate-related activities over the period 2005–2008 amounts to USD 94.96 million and the allocation for 2008 increased by 72 per cent compared with that for 2007. The contributions focus equally on energy and capacity-building (36 per cent each), followed by support for agriculture (13 per cent). Bilateral financial contribution activities are managed by the Austrian Development Agency. The funded activities include technical assistance in mitigation projects and capacity-building for adaptation for a wide variety of countries in sub-Saharan Africa, Latin America, Eastern Europe and Asia. Table 7 summarizes information on financial resources and technology transfer.

Table 7
Summary of information on financial resources and technology transfer for 2005–2010

<i>Channel of financial resources</i>	<i>Years of disbursement</i>					
	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>
ODA (EUR million)	1 266	1 194	1 321	1 188	820	NA
ODA as a percentage of GNI	0.52	0.47	0.50	0.43	0.30	NA
Climate-related aid in bilateral ODA (USD million) ^a	12.55	21.57	22.30	38.54	19.46	NA
Contributions to GEF (EUR million)	9.69	7.11	9.69	9.69	3.75	3.75
UNFCCC (EUR million)	1.07	0.25	0	0.35	0.23	0.23
IPCC (EUR million)	0.02	0.03	0	0.03	0.02	0
JI and CDM under the Kyoto Protocol (EUR million)	6.97	8.46	12.45	8.58	110.03	65.38
Other disbursements (bilateral/multilateral) (USD million) ^b	2.91	2.60	1.50	1.47	1.25	NA
Fast-track financing (EUR million) ^c	–	–	–	–	–	40.5

Data source: Austria's fifth national communication and data provided by Austria during the review.

Abbreviations: CDM = clean development mechanism, GEF = Global Environment Facility, GNI = gross national income, IPCC = Intergovernmental Panel on Climate Change, JI = joint implementation, NA = not available, ODA = official development assistance.

^a Disbursements for 2005–2008 include investments relevant for agricultural development, land and water management if they, amongst other objectives, also implicitly contributed to climate change adaptation. Data for 2009 are based on the Development Assistance Committee Policy Marker on Climate Change Adaptation, although it was not officially introduced until 2010. As a consequence, data for 2005–2008, if compared with data for 2009, may overestimate climate-related aid.

^b Contributions to the Vienna Convention and Montreal Protocol (core contributions and Montreal Protocol Trust Fund).

^c In response to the Copenhagen Accord of 18 December 2009.

107. In 2008, Austria's total ODA amounted to USD 1,714 million, of which USD 123 million (7 per cent) were received by the least developed countries (according to the NC4, the least developed countries received 9.7 per cent of the total ODA in 2004). During the reporting period, the amount of ODA allocated for climate-related assistance showed steady growth.

2. Activities related to transfer of technology, including information under Article 10 of the Kyoto Protocol

108. In its NC5, Austria has provided information on the promotion of access to environmentally sound technologies. The ERT noted that Austria takes part in several multilateral activities, such as: the JI agreements of the International Energy Agency, including “solar heating and cooling”, “demand side management” and “photovoltaic power systems”; the EU Seventh Framework Programme for Research and Development, cooperating with Central and Eastern European countries; the Climate Technology Initiative, which has a mission to foster international cooperation for the development and diffusion of environmentally sound technologies; and the Global Forum on Sustainable Energy, which facilitates sustainable energy projects. Austria’s JI/CDM Programme dedicates a small share of its funds to grants for the development of JI and CDM projects. In 2006, Austria launched the CDM in Africa initiative for capacity-building in four focus countries: Ethiopia, Ghana, Tanzania and Uganda.

109. The NC5 describes five success stories in relation to technology transfer in four continents, namely: a hydropower project in Bhutan; a geothermal system in the former Yugoslav Republic of Macedonia; support to small and medium-sized enterprises in the promotion of environmentally sound technologies in Nicaragua; water supply and sanitation projects in Mozambique; and sustainable natural resource management projects in Ethiopia.

110. The NC5 includes limited information on private-sector activities in the area of technology transfer. Among the initiatives for technology transfer, the NC5 highlights the Competence Centre for Environmental and Energy Technology, established in 2008, and the Export Initiative Environmental Technology, from 2005. Both initiatives support the internationalization of Austrian companies, mainly small and medium-sized enterprises, dealing with environmentally sound technologies.

111. The ERT noted that the majority of the technologies actually transferred were a combination of renewable energy equipment and ‘soft’ technologies in terms of knowledge-sharing, know-how and capacity-building in the priority areas of energy efficiency and renewable energy.

112. The ERT recommends that, in its next national communication, Austria provide more details on: the private sector’s technology transfer initiatives, including success and failure stories; the financing of access by developing countries to ‘hard’ and ‘soft’ environmentally sound technologies; and support for the development and enhancement of endogenous capacities and technologies of developing countries.

F. Research and systematic observation

113. The NC5 provides detailed information on Austria’s actions related to research and systematic observation, and addresses both domestic and international activities, including the World Climate Programme, the Global Climate Observing System (GCOS), the IPCC, the World Glacier Monitoring Service, the International Geosphere–Biosphere Programme, the Global Observation Research Initiative in Alpine Environment, and European research projects on climate modelling. Furthermore, in accordance with the UNFCCC reporting guidelines, Austria has provided a summary of information on GCOS activities. The ERT commends Austria for its detailed information on both research and systematic observation projects and initiatives.

114. In the NC5, Austria has provided detailed information on ongoing research activities. The dense network of observing stations for meteorological and hydrological

parameters is complemented by recent active participation in space-based observation programmes. Austria prioritizes climate and impact research in the Alps, and substantial efforts are invested in the development of limited area models and dynamic downscaled climate change scenarios.

115. The ERT noted that in its NC5 Austria has provided limited information on actions related to capacity-building in developing countries in relation to their participation in research and capacity development to establish and maintain observing systems. However, during the review, Austria provided information on its provision of support to research activities, including climate system studies, monitoring the mass balance of mountain glaciers in the Hindu-Kush region and comparative analysis of European and Asian river basins.

116. Austria has reported in the NC5 that basic research, applied research and technology development research are mainly financed from public funds (more than 80 per cent), with the main emphasis on mitigation technologies. In recent years, the importance of climate impact and adaptation research has increased. The ERT noted that expenditure on research increased from below 2 per cent of GDP in 2000 to 2.5 per cent in 2007, and that in 2007 Austria established the Climate and Energy Fund, with an average annual budget of EUR 150 million, in addition to the already existing funds, to support institutions involved in climate change research.

117. The ERT encourages Austria to include more detailed information in its next national communication on: Austria's provision of support to developing countries to build capacity and to establish and maintain observation systems and related data; research cooperation with developing countries, particularly on the modelling of climate change, water and forestry sector vulnerability impact assessment, and adaptation studies; and opportunities for and barriers to the free and open international exchange of data and information.

G. Education, training and public awareness

118. In the NC5, Austria has provided information on its actions relating to education, training and public awareness at both the domestic (federal and provincial) and international levels. The NC5 provides extensive and updated information on the implementation in Austria of Article 6 of the Convention.

119. The NC5 reports that environmental education has been a principle of instruction of general education since 1979 (since early 1990s for vocational education). A Constitutional Decree (1985), the National Strategy for Sustainable Development (2002) and the Strategy for Education for Sustainable Development (2008) together shape the approach to environmental education. Agricultural education and training programmes include biomass and biogas production topics. Federal and provincial initiatives include training for teachers (even at university level), teaching aids, exhibitions, competitions, field trips and newsletters. The schools have some leeway for their own environmental projects and activities, for example school-made solar heating systems. In its next national communication, Austria may wish to report on the involvement of universities in climate change education and training, including capacity-building for specialists from developing countries.

120. The ERT took note of the wide variety of initiatives of the federal and provincial governments, specialized agencies and civil organizations to promote sustainable lifestyles at all levels of society, on the basis of the perceived gap in Austrian society between knowing about climate change and adjusting lifestyles accordingly. The federal programme klima:aktiv, started in 2004, has had a substantial impact on market uptake and behavioural

change in relation to energy efficiency, mobility and the use of renewable energy in Austrian society. During the review, the ERT learned that the Climate Alliance is an international non-governmental organization (NGO) that in Austria has the nine provinces, over 900 municipalities, more than 500 companies and nearly 250 schools and education facilities as its members, and that members support the indigenous people and rainforests of the Amazon basin and make voluntary commitments with regard to GHG emission reductions.

121. The ERT noted that professional associations, such as the Association of Electricity Companies, the Chamber of Labour and the Chamber of Agriculture, were consulted in the preparation of the NC5. However, public participation in the preparation and domestic review of national communications is not ensured through the involvement of the NGO community and mass media. During the review, the ERT learned that environmental NGOs are informed about climate policy development through informal channels. In its next national communication, Austria may wish to include information on the extent of public participation in the preparation and review of its national communications.

H. Evaluation of supplementary information under Article 7, paragraph 2, of the Kyoto Protocol

122. Austria has provided all supplementary information under Article 7, paragraph 2, of the Kyoto Protocol in its NC5. The supplementary information is placed in different chapters of the NC5. Table 8 lists the chapters of the NC5 where this information is provided. The technical assessment of the information reported under Article 7, paragraph 2, is contained in the relevant sections of this report.

Table 8

Overview of supplementary information under Article 7, paragraph 2, of the Kyoto Protocol

<i>Supplementary information</i>	<i>Reference</i>
National system	NC5, Chapter 3.5
National registry	NC5, Chapter 3.6
Supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17	NC5, Chapter 5.3
Policies and measures in accordance with Article 2	NC5, Chapter 4.3
Domestic and regional programmes and/or legislative arrangements and enforcement and administrative procedures	NC5, Chapter 4.2
Information under Article 10	NC5, Chapters 3.5, 4.2, 6.3, 7.4, 8 and 9
Financial resources	NC5, Chapters 7.1–7.3

Abbreviation: NC5 = Austria's fifth national communication.

I. Minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol

123. Austria has reported the information requested in section H. Minimization of adverse impacts in accordance with Article 3, paragraph 14, of the annex to decision 15/CMP.1 as a part of its 2010 annual submission. During the review, Austria provided the ERT with additional information on how it strives to implement its commitments under

Article 3, paragraph 1, of the Kyoto Protocol in such a way as to minimize adverse social, environmental and economic impacts on developing country Parties, particularly those identified in Article 4, paragraphs 8 and 9, of the Convention. Austria considers that adverse impacts are minimized chiefly as a consequence of the full application of the principles and approaches of the Kyoto Protocol. Further information on the minimization of adverse impacts is included in chapter II.B.4 of this report.

124. During the review, Austria explained that the assessment of potential adverse effects focuses on the distortion of existing trade relations, but that no official procedure for the assessment of potentially adverse impacts exists and that assessments are not documented. Austria indicated that, so far, any potentially adverse impacts are considered to be small due the size of the country. The ERT considers the reported information to be complete and broadly transparent. The ERT recommends that Austria continue exploring how to improve its reporting on the adverse impacts of response measures.

125. In the 2010 annual submission, Austria has provided information on additional activities, including the reform of energy markets (as a result of EU directives) and taxation in the transport sector (on fuels and vehicles). The launch of a renewable energy and energy efficiency programme for Africa under the Austrian initiative CDM in Africa is intended to support the diffusion and transfer of fossil fuel technologies which generate fewer emissions. Under the Climate Technology Initiative, Austria has highlighted its collaboration with the Department of Energy in Bhutan on the development of hydropower infrastructure and the energy use of biomass.

126. To improve transparency, Austria may wish to consider the development of a systematic assessment of potentially adverse impacts of PaMs and to report in its next national communication the results of such an assessment, including any quantitative estimates, if applicable.

III. Conclusions and recommendations

127. The ERT concludes that the NC5 generally provides a good overview of the national climate policy of Austria. The information provided in the NC5 includes almost all the mandatory information required by the UNFCCC reporting guidelines and all elements of the supplementary information under Article 7, paragraph 2, of the Kyoto Protocol. During the review, Austria provided additional information on how its use of the Kyoto Protocol mechanisms is supplemental to domestic action and how financial resources have been determined as being “new and additional”. However, the ERT noted with great concern the delay in the submission of the NC5.

128. Austria’s GHG emissions in 2008 were 10.8 per cent above its 1990 level excluding LULUCF and 6.6 per cent above including LULUCF. The increase in emissions was driven by the increase in activities in transport and industry. These factors outweighed the improvements in the efficiency of the supply and use of energy, the increased share of renewable energy, the enhanced GHG removals from the LULUCF sector and the reduction in emissions from the agriculture and waste sectors.

129. The NC5 presents GHG projections for 2010, 2015 and 2020 under ‘with measures’ and ‘with additional measures’ scenarios. The emission projections for 2010 are 93.87 Mt CO₂ eq under the ‘with measures’ scenario (20.1 per cent higher than emissions in 1990) and 92.87 Mt CO₂ eq under the ‘with additional measures’ scenario (18.8 per cent above the 1990 level). According to the projections in the NC5, Austria’s emissions are expected to exceed its Kyoto Protocol target in the first commitment period (which is 68.77 Mt CO₂ eq, a 13 per cent reduction compared with the base year level). Austria plans to meet its target by a combination of domestic efforts, including the use of accounting for activities

under Article 3, paragraph 3, of the Kyoto Protocol (0.7 Mt CO₂ annually), and use of Kyoto units (12.1 Mt CO₂ eq annually). However, the ERT noted that a gap to the target still remains even after taking into account the planned use of the Kyoto units and accounting for activities under Article 3, paragraph 3, and it is not clear how Austria is going to meet its Kyoto Protocol target. Emissions in 2020 are projected to be 98.11 Mt CO₂ eq (24.1 per cent above the 1990 level) and 89.61 Mt CO₂ eq (13.4 per cent above the 1990 level) under the ‘with measures’ and ‘with additional measures’ scenarios, respectively.

130. Austria has reported almost all information on projections of emissions required by the UNFCCC reporting guidelines. However, Austria has not provided emission projections related to fuel sold to ships and aircraft engaged in international transport. The projections of emissions and removals from the LULUCF sector were somewhat unclear and were not presented relative to historical data for 1990, 1995, 2000 and 2005. The total effect of PaMs might have been systematically overestimated, due to not separating autonomous efficiency improvements from those derived from PaMs and not taking account of changes in behaviour because of PaMs.

131. The NC5 contains information on how Austria’s use of the mechanisms under Articles 6, 12 and 17 of the Kyoto Protocol is supplemental to domestic action, but it does not provide a definition of supplementarity. Austria plans to use 12.1 Mt CO₂ eq annually of Kyoto units during the period 2008–2012, an amount smaller than the estimated 18 Mt CO₂ eq annual reduction in GHG emissions achieved by implemented and adopted domestic PaMs. However, if the remaining gap to the Kyoto target were closed by the use of additional Kyoto units, then the contribution of the use of mechanisms to meet the target could be greater than the effect of domestic efforts.

132. Austria’s key mitigation PaMs are outlined in the Climate Strategy (adopted in 2002 and revised in 2007), the Energy Strategy (presented in 2010 but not adopted by the Government yet) and the Climate Act (under preparation). The Climate Strategy identifies measures to meet the Kyoto Protocol target, including a significant extension of the JI/CDM Programme, and sectoral targets for GHG emissions. The Energy Strategy aims to stabilize energy consumption in 2020 at the level of 2005, while increasing the share of renewable energy in final energy consumption to 34 per cent. To achieve this target, additional PaMs will be introduced, especially in the areas of transport, space heating, energy efficiency and energy generation from renewable energy sources. The ERT noted that both the Climate Strategy and the Energy Strategy are strategic documents, thus not legally binding, so the PaMs outlined therein may not necessarily be implemented.

133. A significant part of the development of PaMs is deferred to the provincial or municipal level. The Kyoto Forum and the Inter-Ministerial Committee to Coordinate Measures to Protect Global Climate facilitate communication between the federal level, the provincial levels and the social partners, by meeting regularly and, when necessary, creating working groups.

134. During the review, Austria clarified that all contributions to climate-related activities made after the Convention entered into force are considered “new and additional”, including the EUR 120 million fund pledged for the period 2010–2012 in response to the Copenhagen Accord of 18 December 2009. The climate-related assistance provided to developing countries focuses on energy, capacity-building and agriculture.

135. Austria considers itself a country that is vulnerable to climate change impacts, especially the mountainous ecosystems. The ERT noted the significant efforts made by Austria towards the adoption of a NAS and the variety of stakeholders involved in the process. Austria collaborates with developing countries in relation to climate change impacts on mountainous regions.

136. Environmental issues, including climate change, have been part of both general and vocational education since the early 1990s and have gained more importance since the Strategy for Education on Sustainable Development was adopted in 2008. Provinces, municipalities and NGOs have their own training and awareness-raising, behaviour-changing activities, in addition to the klima:aktiv federal initiative. Austria has a very long tradition of meteorological and hydrological research, and international collaboration has been increasing in recent years.

137. The ERT concluded that Austria's national system continues to perform its required functions as set out in decision 19/CMP.1; and that the national registry continues to perform the functions set out in the annex to decision 13/CMP.1 and the annex to decision 5/CMP.1, and continues to adhere to the technical standards for data exchange between registry systems in accordance with relevant decisions of the CMP. The ERT noted that updates of databases and applications, implemented security measures and changes to the national registry software are documented on a regular basis by nominated responsible persons. The ERT also noted that the national registry experienced serious security problems in January 2011. During the review, Austria informed the ERT that additional higher-level security measures are being implemented.

138. Supplementary information under Article 7, paragraph 1, of the Kyoto Protocol on the minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol provided by Austria in its 2010 annual submission is complete and broadly transparent.

139. In the course of the IDR, the ERT formulated several recommendations relating to the completeness and transparency of Austria's reporting under the Convention and its Kyoto Protocol. The key recommendations⁹ are that Austria:

- (a) Improve the completeness of reporting by including in its next national communication:
 - (i) Projections of GHG emissions by gas for the national total;
 - (ii) Projections of GHG emissions from fuel used in international aviation and shipping;
 - (iii) Complete projections for the LULUCF sector presented relative to actual inventory data;
 - (iv) Information on how financial resources have been determined as being "new and additional";
- (b) Improve the transparency of reporting by including in its next national communication further information on:
 - (i) How changes in its national circumstances affected GHG emissions for all sectors;
 - (ii) The estimated total effect of implemented and adopted PaMs;
 - (iii) How its use of the Kyoto Protocol mechanisms is supplemental to domestic action;
 - (iv) Initiatives of the private sector in the area of technology transfer;
 - (v) Financing access by developing countries to 'hard' and 'soft' environmentally sound technologies;

⁹ The recommendations are given in full in the relevant sections of this report.

(vi) Supporting the development and enhancement of endogenous capacities and technologies of developing countries;

(c) Improve the transparency of reporting by including in its next annual submission further information on how it gives priority to the actions taken to implement its commitments under Article 3, paragraph 14, of the Kyoto Protocol on the minimization of adverse impacts of response measures to climate change.

140. The ERT recommends that Austria implement security measures in its national registry to prevent and resolve unauthorized manipulations in accordance with paragraph 115(e) of decision 22/CMP.1.

141. The ERT encourages Austria to undertake a number of improvements regarding the transparency and completeness of its reporting; the most important of these are that Austria:

(a) Estimate the effect of individual or groups of PaMs and the total effect of PaMs for all sectors;

(b) Include further information on PaMs that could lead to increased GHG emissions;

(c) Include an analysis of the sensitivity of the projections to different rates of GDP growth;

(d) Provide further information on how its use of the Kyoto Protocol mechanisms is supplemental to domestic action;

(e) Improve the structure of the information in the vulnerability and adaptation chapters of the NC5;

(f) Include the vulnerability assessment of the sectors not included in the NC5;

(g) Include information on the policies for and funding of systematic observation, including support for developing countries.

IV. Questions of implementation

142. During the review, the ERT assessed the NC5, including supplementary information provided under Article 7, paragraph 2, of the Kyoto Protocol, and reviewed information on the minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol, with regard to timeliness, completeness and transparency. No question of implementation was raised by the ERT during the review.

Annex

Documents and information used during the review

A. Reference documents

“Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications”. FCCC/CP/1999/7. Available at <<http://unfccc.int/resource/docs/cop5/07.pdf>>.

“Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual inventories”. FCCC/CP/1999/7. Available at <<http://unfccc.int/resource/docs/cop5/07.pdf>>.

“Guidelines for the preparation of the information required under Article 7 of the Kyoto Protocol”. Decision 15/CMP.1. Available at <<http://unfccc.int/resource/docs/2005/cmp1/eng/08a02.pdf#page=54>>.

“Guidelines for review under Article 8 of the Kyoto Protocol”. Decision 22/CMP.1. Available at <<http://unfccc.int/resource/docs/2005/cmp1/eng/08a03.pdf#page=51>>.

FCCC/SBI/2007/INF.6. Compilation and synthesis of fourth national communications. Available at <<http://unfccc.int/resource/docs/2007/sbi/eng/inf06.pdf>>.

FCCC/SBI/2007/INF.6/Add.1. Compilation and synthesis of fourth national communications, Add.1: Policies, measures, past and projected future greenhouse gas emission trends of Parties included in Annex I to the Convention. Available at <<http://unfccc.int/resource/docs/2007/sbi/eng/inf06a01.pdf>>.

FCCC/SBI/2007/INF.6/Add.2. Compilation and synthesis of fourth national communications, Add.2: Financial resources, technology transfer, vulnerability, adaptation and other issues relating to the implementation of the Convention by Parties included in Annex I to the Convention. Available at <<http://unfccc.int/resource/docs/2007/sbi/eng/inf06a02.pdf>>.

FCCC/SBI/2007/INF.7. Compilation and synthesis of supplementary information incorporated in fourth national communications submitted in accordance with Article 7, paragraph 2, of the Kyoto Protocol. Available at <<http://unfccc.int/resource/docs/2007/sbi/eng/inf07.pdf>>.

FCCC/ARR/2009/AUT. Report of the individual review of the annual submission of Austria submitted in 2009. Available at <<http://unfccc.int/resource/docs/2010/arr/aut.pdf>>.

FCCC/IRR/2007/AUT. Report of the review of the initial report of Austria. Available at <<http://unfccc.int/resource/docs/2007/irr/aut.pdf>>.

FCCC/IDR.4/AUT. Report of the centralized in-depth review of the fourth national communication of Austria. Available at <<http://unfccc.int/resource/docs/2009/idr/aut04.pdf>>.

Fourth national communication of Austria. Available at <<http://unfccc.int/resource/docs/natc/autnc4.pdf>>.

Fifth national communication of Austria. Available at <http://unfccc.int/resource/docs/natc/aut_nc5.pdf>.

2009 greenhouse gas (GHG) inventory submission of Austria. Common reporting format (CRF) tables available at <http://unfccc.int/files/national_reports/annex_i_ghg_inventories/national_inventories_submissions/application/zip/aut_2009_crf_15apr.zip>.

2009 GHG inventory submission of Austria. National inventory report (NIR) available at <http://unfccc.int/files/national_reports/annex_i_ghg_inventories/national_inventories_submissions/application/zip/aut_2009_nir_15apr.zip>.

2009 GHG inventory submission of Austria. Supplementary information under the Kyoto Protocol available at <http://unfccc.int/files/national_reports/annex_i_ghg_inventories/national_inventories_submissions/application/zip/aut_2009_kplulucf_15apr.zip> and <http://unfccc.int/files/national_reports/annex_i_ghg_inventories/national_inventories_submissions/application/zip/aut_2009_sef_15apr.zip>.

2010 GHG inventory submission of Austria. CRF tables available at <http://unfccc.int/files/national_reports/annex_i_ghg_inventories/national_inventories_submissions/application/zip/aut-2010-crf-4nov.zip>.

2010 GHG inventory submission of Austria. NIR available at <http://unfccc.int/files/national_reports/annex_i_ghg_inventories/national_inventories_submissions/application/zip/aut-2010-nir-27may.zip>.

2010 GHG inventory submission of Austria. Supplementary information under the Kyoto Protocol available at <http://unfccc.int/files/national_reports/annex_i_ghg_inventories/national_inventories_submissions/application/zip/aut-2010-kplulucf-4nov.zip> and <http://unfccc.int/files/national_reports/annex_i_ghg_inventories/national_inventories_submissions/application/zip/aut-2010-sef-15april.zip>.

B. Additional information provided by the Party

Responses to questions during the review and additional material on updated policies and measures, GHG projections, the national registry and recent climate policy developments in Austria were received from: Mr. Heinz Bach Mr. Matthias Braun Ms. Marie-Theres Bristela, Mr. Martin Eder, Ms. Elisabeth Freytag, Ms. Angela Friedrich, Mr. Helmut Hojesky, Mr. Thomas Hörhan, Mr. Wolfgang Jank, Mr. Michael Keller, Mr. Manfred Kohlbach, Ms. Katharina Kowalski, Mr. Martin Kriech, Ms. Barbara Kronberger, Mr. Gottfried Lamers, Mr. Christopher Lamport, Mr. Günter Liebel, Ms. Nora Mitterböck, Ms. Elfriede More, Mr. Raimund Quint, Mr. Bernhard Rebernick, Mr. Robert Thaler, Ms. Petra Völkl, Mr. Peter Wiederkehr and Ms. Traude Wollansky (Federal Ministry for Agriculture, Forestry, Environment and Water Management), Mr. Rainer Pilz, Mr. Leander Treppel and Ms. Elisabeth Vitzthum (Federal Ministry of Finance), Ms. Martina Ammer, Mr. Wolfgang Grubert, Ms. Elisabeth Huchler and Mr. Ernst Lung (Federal Ministry for Transport, Innovation and Technology), Mr. Herwig Dürr, Mr. Florian Frauscher and Mr. Otto Zach (Federal Ministry of Economy, Family and Youth), Mr. Günter Pfaffenwimmer (Federal Ministry for Education, Arts and Culture), Mr. Franz Breitwieser (Federal Ministry for European and International Affairs), Mr. Michael Anderl, Ms. Maria Balas, Mr. Sigmund Böhmer, Mr. Thomas Krutzler, Mr. Christoph Lampert, Ms. Sabine McCallum, Mr. Christian Neubauer, Ms. Maria Purzner, Mr. Klaus Radunsky, Mr. Manfred Ritter, Ms. Katrin Seuss, Ms. Melanie Sporer, Mr. Alexander Storch, Ms. Gudrun Stranner, Mr. Peter Weiss and Mr. Gerhard Zethner (Environment Agency Austria), Mr. Klemens Schadauer (Federal Forest Office), Mr. Stephan Fickl (Austrian Energy Agency), Ms. Pia Paola Huber and Mr. Christoph Müller (Federal Chancellery), Mr. Erwin Künzi (Austrian Development Agency), Mr. Andreas Drack (coordinator and speaker of the nine Austrian regions), Mr. Herbert Formayer (University of Natural Resources and Life Sciences, Vienna), Mr. Willi Haas (University of Klagenfurt), Mr. Wolfgang Schöner (Central Institute for Meteorology and Geodynamics), Mr. Peter Molnar and Ms. Maria Hawle (Climate Alliance Austria), and Mr. Gerhard Schwarz (Smart Technologies). The following documents¹ were also provided by Austria:

Austrian Energy Agency and the Ministry for Agriculture and Forestry, Environment and Water Management (2009). *Klima:aktiv – Annual report 2007/2008 – Stimulating the economy.*

Ministry of Transport, Innovation and Technology (2010). *Take off – The Austrian aeronautics research and technology programme – Latest results in 2010.*

Ministry of Transport, Innovation and Technology (2010). *Austrian technological expertise in transport - Focusing on hydrogen and fuel cells.*

Ministry of Transport, Innovation and Technology (2010). *Austrian technological expertise in transport - Focusing on transport fuels.*

Ministry of Transport, Innovation and Technology (2010). *Austrian technological expertise in transport - Focusing on hybrid and electric vehicles.*

Ministry of Transport, Innovation and Technology (2010). *Intelligent mobility – Transport in Changing times – Research, Technology, Innovation.*

Ministry for Agriculture and Forestry, Environment and Water Management and Kommunal Kredit (2009). *Österreichs JI/CDM Programm 2009 (Austria's JI/CDM Programme).*

¹ Reproduced as received from the Party.

Ministry for Agriculture and Forestry, Environment and Water Management and Ministry of European and International Affairs (2009). *Strategic guideline on Env & Development in Austrian Dev. Policy*.

Ministry for Agriculture and Forestry, Environment and Water Management (2008). *Sustainable Forest Management in Austria – Austrian Forest report 2008*.

Ministry for Agriculture and Forestry, Environment and Water Management (2009). *The Austrian Forest Programme. Walddialog*.

Ministry for Agriculture and Forestry, Environment and Water Management and Kommunal Kredit (2008). *Umweltförderungen des Bundes 2008* (Economic incentives for the environment 2008).

Ministry for Agriculture and Forestry, Environment and Water Management and Kommunal Kredit (2009). *Umweltförderungen des Bundes 2009* (Economic incentives for the environment 2009).
