United Nations FCCC/IDR.5/CZE

Framework Convention on Climate Change

Distr.: General
4 November 2010

English only

Report of the in-depth review of the fifth national communication of the Czech Republic

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 the Czech Republic conducted by an expert review team in accordance with relevant provisions of the Convention and Article 8 of the Kyoto Protocol.

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I. Introduction and summary

A. Introduction

1. For the Czech Republic the Convention entered into force on 21 March 1994 and the Kyoto Protocol on 16 February 2005. Under the Kyoto Protocol, the Czech Republic committed itself to reducing its greenhouse gas (GHG) emissions by 8 per cent compared with the base year[1] 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 the Czech Republic, 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 21 to 26 June 2010 in Prague, the Czech Republic, and was conducted by the following team of nominated experts from the UNFCCC roster of experts: Mr. Eilev Gjerald (Norway), Mr. Stanford Mwakasonda (South Africa), Mr. Julien Vincent (France) and Ms. Duduzile Nhlengethwa (Swaziland). Mr. Gjerald and Mr. Mwakasonda were the lead reviewers. The review was coordinated by Mr. Harald Diaz-Bone and Ms. Barbara Muik (UNFCCC secretariat).

3. During the IDR, the expert review team (ERT) examined each part of the NC5. The ERT also evaluated the supplementary information provided by the Czech Republic 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 the Czech Republic 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 the Czech Republic, which provided comments that were considered and incorporated, as appropriate, in this final version of the report.

B. Summary

5. The ERT noted that the Czech Republic'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 Protocol[2] is provided in the NC5. The Czech Republic considered some of the recommendations provided in the report of the centralized in-depth review of the fourth national communication of the Czech Republic (hereinafter referred to as the previous review report).[3] The ERT commended the Czech Republic for its coherent and consistent reporting. The ERT also commended the Czech Republic for reporting on its provision of financial resources and transfer of technology to developing countries even though this is not a mandatory reporting element for the Party. The ERT noted that the Czech Republic has introduced a number of cross-cutting and sector-specific policies and measures (PaMs)

[1] "Base year" refers to the base year under the Kyoto Protocol, which is 1990 for carbon dioxide, methane and nitrous oxide, and 1995 for perfluorocarbons, hydrofluorocarbons and sulphur hexafluoride. 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/CZE.

relevant to climate change and that the Party is implementing a number of European Union (EU)-wide PaMs, such as the 2008 EU climate and energy package.

6. The supplementary information on the minimization of adverse impacts referred to in paragraph 3 above was mostly complete and transparent and was provided on time. During the review, the Czech Republic provided further relevant information.

1. Completeness

7. The NC5 covers all sections required by the UNFCCC reporting guidelines and all supplementary information under Article 7, paragraph 2, of the Kyoto Protocol stipulated by decision 15/CMP.1. However, the NC5 does not include some information required by the UNFCCC reporting guidelines on PaMs (see paras. 26 and 27 below) and projections (see para. 69 below). The ERT recommends that the Czech Republic enhance the completeness of its reporting by providing this information in its next national communication.

2. Transparency

8. The ERT acknowledged that the Czech Republic's NC5, including supplementary information provided under Article 7, paragraph 2, of the Kyoto Protocol, is generally comprehensive and transparent. The NC5 provides clear information on all aspects of implementation of the Convention and its Kyoto Protocol. It is structured following the outline contained in the annex to the UNFCCC reporting guidelines. Supplementary information submitted under Article 7, paragraph 2, of the Kyoto Protocol is easily identifiable. In the course of the review, the ERT formulated a number of recommendations that could help the Czech Republic to further increase the transparency of its reporting, such as that the Party: (a) provide more detailed information on how its national circumstances affect GHG emissions and removals in the country; (b) expand on its reporting of PaMs in the non-energy sectors; (c) improve the description of PaMs relating to energy supply, energy consumption and transport; (d) improve the description of respective responsibilities in the areas of climate policymaking and monitoring; and (e) provide more detailed information on the climate models used for its vulnerability assessments.

3. Timeliness

9. The NC5 was submitted on 30 November 2009, before the deadline of 1 January 2010 stipulated by decision 10/CP.13.

II. Technical assessment of the reviewed elements

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

10. In its NC5, the Czech Republic has provided a concise description of its national circumstances and has elaborated on the framework legislations and key policy documents on climate change. The NC5 also refers to the description of the national system provided in the Party's initial report under the Kyoto Protocol. Further technical assessment of the institutional and legislative arrangements for coordination and implementation of PaMs is provided in chapter II B of this report.

1. National circumstances

11. In its NC5, the Czech Republic has provided a description of its national circumstances and information on how these national circumstances affect GHG emissions and removals in the Czech Republic and how changes in national circumstances affect GHG emissions and removals over time. Information has been provided on government structure, population, geography, climate, the economy and relevant economic sectors. However, the ERT noted that information has not been provided on how the Czech Republic's national circumstances are relevant to factors affecting GHG emissions and removals, including disaggregated indicators, to explain the relationship between the Party's national circumstances and its emissions or removals. The ERT therefore reiterates the encouragement from the previous review report that the Czech Republic should provide more detailed information on how its national circumstances affect GHG emissions and removals in the country.

12. The Czech Republic is a parliamentary democracy, headed by the President, who is elected by the Parliament. The Parliament constitutes the highest legislative body in the country – it approves proposed laws and expresses consent or dissent in relation to international conventions, protocols and various strategic documents, including those relating to the environment. Executive power lies within the Government. With regard to environmental protection, the Ministry of the Environment (MoE) is the highest executive body of the state administration. The Czech Republic became an EU member State in May 2004 and thus has the obligation to implement EU environmental legislation. The ERT noted that the NC5 accurately describes the structure of the administration working on climate issues in MoE.

13. However, the NC5 does not describe how other ministries are involved in national climate-policymaking and the implementation of PaMs. During the review, the Czech Republic explained that cooperation between the ministries is on an ad hoc basis and that, since it has not been in operation since 2007, the National Climate Change Committee was cancelled by ministerial decree in May 2010, which means that no formal committee exists where stakeholders can meet and discuss the national climate policy. The ERT encourages the Czech Republic to further elaborate its reporting on its legislative arrangements and administrative procedures by describing how individual ministries are involved in national climate-policymaking and the implementation of PaMs and where their responsibilities in climate change policymaking lie.

14. The ERT noted that, since 1990, GHG emissions in the Czech Republic have decreased substantially. This decrease occurred mainly in the early 1990s and was driven by the transition from a centrally-planned economy to a market economy and by the respective restructuring in manufacturing industries, energy industries and agriculture. The main drivers for the Party's emission trends since then comprise: (a) the country's continuous economic growth, expressed in terms of gross domestic product (GDP); (b) demographic developments; (c) the increase in road transportation, as in many other industrialized countries; (d) changes in primary energy supply, including a shift to cleaner fuels; (e) increased use of nuclear power and development of renewable energy sources (RES); (f) increased energy efficiency in the residential and commercial sectors; and (g) structural changes in the agriculture sector, such as a decline in numbers of livestock. Table 1 illustrates the national circumstances of the country by providing some indicators relevant to GHG emissions and removals.

15. The Czech economy has become less carbon-intensive since 1990. Nevertheless, the emission intensity of the Czech economy was still higher than that of most other European countries in 2008, even though the GHG emissions per GDP unit ratio had already decreased by 49.2 per cent between 1990 and 2008. Over that period, GDP grew by 43 per cent, while emissions decreased by 27.5 per cent, which reflects a decoupling of GHG

emission trends from economic development. Similarly, although the level of GHG emissions per capita had already decreased by 28 per cent over the same period, the Czech Republic had one of the highest levels of GHG emissions per capita in Europe in 2008. The main reasons for this are the still high share of fossil fuels, especially solid fuels, in its primary energy supply, and the relatively high energy intensity of its economy.

Table 1
Indicators relevant to greenhouse gas emissions and removals for the Czech Republic

	1990	*1995*	*2000*	*2007*	*2008*	*Change 1990–2008 (%)*	*Change 1990–2008 (%/year)*	*Change 2007–2008 (%)*
Population (million)	10.36	10.33	10.27	10.32	10.43	0.7	0.0	1.1
GDP (2000 USD billion using PPP)	150.17	143.09	154.03	209.78	214.95	43.1	2.0	2.5
TPES (Mtoe)	48.75	40.90	40.25	45.78	44.63	–8.5	–0.5	–2.5
GDP per capita (2000 USD thousand using PPP)	14.50	13.85	15.00	20.33	20.61	42.1	2.0	1.4
TPES per capita (toe)	4.71	3.96	3.92	4.44	4.28	–9.1	–0.5	–3.6
CO_2 emissions without LULUCF (Tg)	164.33	131.40	127.14	126.39	120.74	–26.5	–1.7	–4.5
GHG emissions without LULUCF (Tg CO_2 eq)	195.18	153.52	147.51	147.46	141.41	–27.5	–1.8	–4.1
GHG emissions/ removals by LULUCF (Tg CO_2 eq)	–3.63	–7.21	–7.54	–0.73	–4.78	31.7	1.5	554.8
GHG emissions with LULUCF (Tg CO_2 eq)	191.55	146.31	139.96	146.73	136.63	–28.7	–1.9	–6.9
CO_2 emissions per capita (Mg)	15.86	12.72	12.38	12.25	11.58	–27.0	–1.7	–5.5
CO_2 emissions per GDP unit (kg per 2000 USD using PPP)	1.09	0.92	0.83	0.60	0.56	–48.6	–3.6	–6.7
GHG emissions per capita (Mg CO_2 eq)	18.84	14.86	14.36	14.29	13.56	–28.0	–1.8	–5.1
GHG emissions per GDP unit (kg CO_2 eq per 2000 USD using PPP)	1.30	1.07	0.96	0.70	0.66	–49.2	–3.7	–5.7

Sources: (1) GHG emissions data: the Czech Republic's 2010 GHG inventory submission; (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. In its NC5, the Czech Republic has provided a summary of information on GHG emission trends for the period 1990–2007. This information is consistent with the 2009

national GHG inventory submission. Summary tables, including trend tables for emissions of carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O), given in summary table 2 of the common reporting format, are provided in an annex to the NC5. Trend tables for total GHG emissions in CO_2 eq are also included. However, the ERT noted that the Czech Republic did not provide a summary of information of GHG emission trends for the period 1990–2007 for hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6) as required by the UNFCCC reporting guidelines. During the review, the ERT assessed emissions data from the Party's recently submitted 2010 annual submission and it has reflected the findings in this report.

Table 2
Greenhouse gas emissions by sector in the Czech Republic, 1990–2008

	GHG emissions (Tg CO_2 eq)					*Change (%)*		*Shares[a] by sector (%)*	
Sector	*1990*	*1995*	*2000*	*2007*	*2008*	*1990–2008*	*2007–2008*	*1990*	*2008*
1. Energy	156.24	132.97	121.42	119.75	114.62	–26.6	–4.3	80.0	81.1
A1. Energy industries	57.97	59.53	59.89	66.35	62.32	7.5	–6.1	37.1	54.4
A2. Manufacturing industries and construction	46.89	36.85	28.36	16.95	16.10	–65.7	–5.0	30.0	14.0
A3. Transport	7.45	10.81	12.59	19.27	18.73	151.3	–2.8	4.8	16.3
A4.–A5. Other	35.43	19.43	14.86	11.92	12.39	–65.0	3.9	22.7	10.8
B. Fugitive emissions	8.50	6.36	5.71	5.26	5.09	–40.1	–3.2	5.4	4.4
2. Industrial processes	19.60	14.04	13.61	15.53	14.34	–26.8	–7.6	10.0	10.1
3. Solvent and other product use	0.76	0.59	0.57	0.51	0.52	–32.6	0.6	0.4	0.4
4. Agriculture	15.94	9.49	8.66	8.12	8.32	–47.8	2.5	8.2	5.9
5. LULUCF	–3.63	–7.62	–7.54	–0.73	–4.78	31.6	554.6	–1.9	–3.4
6. Waste	2.65	3.17	3.25	3.56	3.60	36.0	1.4	1.4	2.5
GHG total with LULUCF	**195.18**	**160.25**	**147.51**	**147.46**	**141.41**	**–28.7**	**–6.9**	**98.1**	**96.6**
GHG total without LULUCF	**156.24**	**132.97**	**121.42**	**119.75**	**114.62**	**–27.5**	**–4.1**	**100.0**	**100.0**

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.

[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.

17. Total GHG emissions excluding emissions and removals from land use, land-use change and forestry (LULUCF) decreased by 27.5 per cent between 1990 and 2008, while total GHG emissions including net removals from LULUCF decreased by 28.7 per cent. The reduction was mainly attributed to CO_2 emissions, which decreased by 26.5 per cent over that period. The majority of the decrease in emissions occurred during the period 1990–1993, with emissions decreasing by 17.3 per cent for CO_2, by 19.9 per cent for CH_4,

by 32.9 per cent for N_2O and in total by 17.3 per cent. Emissions of fluorinated gases (F-gases) accounted for about 0.04 per cent of total GHG emissions in 1990 and 0.9 per cent in 2008. Trends in the Party's total GHG emissions were mostly underpinned by emission trends in the energy and agriculture sectors, driven by the reduction in production and the subsequent restructuring of the economy. Analysis of drivers for GHG emission trends in each sector is provided in chapter II B of this report. Table 2 provides an overview of GHG emissions by sector from the base year to 2008

2. National system

18. In accordance with decision 15/CMP.1, the Czech Republic has provided in its NC5 a description of how its national system is performing the general and specific functions defined in the guidelines for national systems under Article 5, paragraph 1 (decision 19/CMP.1). The Czech Republic also provided a reference to its initial report under the Kyoto Protocol, which contains a more detailed description of the national system. The description includes all elements required by decision 15/CMP.1, inter alia: the name and contact information of the coordinator of the national inventory; the roles and responsibilities of various agencies and entities; a description of the quality assurance/quality control (QA/QC) plan; and a description of the procedures for the official consideration and approval of the inventory. However, the descriptions of some of the major activities in the inventory preparation process, for example collecting activity data, identifying key sources and recalculating previously submitted inventory data, could have been elaborated further.

19. The Czech Republic has provided a description of its national legislative arrangements and administrative procedures that seek to ensure that the implementation of activities under Article 3, paragraph 3, and elected activities under Article 3, paragraph 4, also contributes to the conservation of biodiversity and the sustainable use of natural resources. The main goals of Czech adaptation and mitigation strategies in the area of forestry are to increase the diversity of its tree species, to increase the spatial diversity of forest stands, to promote more forest-friendly means of management and to move towards gentle soil maintenance for the enhancement of the forests' hydrological functions. The key document at the national level is the National Forest Programme, established for the period until 2013. Furthermore, the Czech adaptation and mitigation policy for forestry comprises three upcoming intersectoral documents, entitled Climate Protection Policy, Strategy for Climate Change Adaptation in the Czech Republic and Vision for Czech Agriculture beyond 2010.

20. During the review, the Czech Republic provided additional information on the national system and informed the ERT that improvements to the QA/QC plan and to the archiving system, as recommended in the report of the individual review of the Party's 2009 annual submission,[4] had been elaborated but not fully implemented at the time of the preparation of its 2010 annual inventory submission. The ERT concluded that the national system continued to perform its required functions as set out in decision 19/CMP.1.

3. National registry

21. In its NC5, the Czech Republic has provided information on the national registry. This information includes a description of how its national registry performs the functions defined in the annex to decision 13/CMP.1 and the annex to decision 5/CMP.1 and how it complies with the requirements of the technical standards for data exchange between registry systems.

[4] FCCC/ARR/2009/CZE.

22. During the review, the Czech Republic provided additional information on: (a) the measures put in place to safeguard, maintain and recover registry data; (b) the security measures employed in the registry to prevent unauthorized data manipulation; (c) the measures put in place to protect the registry against security compromises; (d) test procedures related to the performance of the national registry; and (e) the recording of the changes to and discrepancies in the national registry. All documents requested by the ERT during the review were provided by the Czech Republic. Further, the Czech Republic demonstrated to the ERT 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.

23. The ERT took note of the conclusion of the standard independent assessment report (SIAR) that the national registry of the Czech Republic continues to perform its required functions and continues to adhere to the technical standards for data exchange between registry systems. The SIAR also states that the national registry has appropriate security, data safeguard and disaster recovery measures in place and that its operational performance is adequate.

24. The ERT concluded that the Czech Republic's 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.

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

25. As required by the UNFCCC reporting guidelines, the Czech Republic has provided in its NC5 information on its package of PaMs implemented, adopted and planned in order to fulfil its commitments under the Convention and its Kyoto Protocol. The Czech Republic 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. The NC5 contains, with a few exceptions, a similar set of PaMs to those in the fourth national communication (NC4).

26. The ERT noted, however, that the Czech Republic did not provide the following reporting elements required by the UNFCCC reporting guidelines: a textual description of the principal PaMs by sector, and a presentation of each policy or measure including sectors affected and key purposes and benefits. Some of the recommendations made in the previous review report were taken into consideration by the Party to improve its reporting in the NC5, including that the Party report in more detail on PaMs in the energy sector. The ERT reiterates the recommendation made in the previous review report that the Czech Republic provide textual descriptions of all major PaMs by sector and by gas. The ERT further recommends that the Czech Republic improve its reporting by including information on PaMs in the non-energy sectors, which has been provided to a very limited extent in its NC5.

27. The ERT noted that the Czech Republic provided only limited information on PaMs at the national and subnational/regional levels. The synergies and overlap among the PaMs at the national and subnational/regional levels were only explained during the review, and the ERT observed that the NC5 did not provide information on how the effects of PaMs are monitored over time, and by whom. The NC5 does not include the estimated effects of the various PaMs at sector level, but does include the estimated effects of PaMs by gas. Information on the estimated effects of PaMs by sector was subsequently provided during

the review. Similarly, the costs of implementation of the PaMs were not provided in the NC5, but were provided to the ERT during the review, and cost analysis seems to play an important role in the designing of climate policy in the Czech Republic.

28. During the review, information was provided on the latest developments in the Party's climate change policy, including levies on used cars and a number of climate change related programmes and areas receiving subsidies. The ERT understood that some of the above-mentioned information became available only after the Party had finished its NC5. It therefore commends the Czech Republic for providing this information during the review and encourages the Party to enhance the transparency of its reporting by providing such information, if appropriate, in its next national communication.

29. The ERT noted that several PaMs included in the NC4 were not mentioned in the NC5. It also noted that a list of terminated PaMs was provided in the NC5, and, during the review, the Czech Republic explained that more PaMs had been revised or terminated. Table 3 provides a summary of the reported information on the PaMs of the Czech Republic. Most of this information is part of the draft Climate Change Policy of MoE (see para. 39 below) and was provided during the review.

Table 3
Summary of information on policies and measures

Major policies and measures	*Examples/comments*
Policy framework and cross-sectoral measures	
National Programme to Abate the Climate Change Impacts in the Czech Republic	Cross-cutting and strategic framework programme of the Czech Government
Green Investment Scheme	Support programme subsidizing heating installations using renewables, and energy savings in reconstructions and new buildings. Aim to achieve a long-term reduction in emissions, extending beyond 2012
European Union (EU) emissions trading scheme	Regulates CO_2 emissions from major industrial installations
Policies and measures by sector	
Energy	
Draft State Energy Concept	Provides a 30-year strategic outlook reflecting the Czech Republic's objectives in the area of energy management in accordance with the needs of sustainable development
Reducing emissions in industry	Includes reduction of energy consumption in industry through better management of heat and electricity (3.6 Mt CO_2 eq)
Construction of gas-fuelled power plants	Construction of three new 440 kW steam-gas blocks envisaged, reducing emissions through the replacement of the production of 6.6 TWh from coal (4.2 Mt CO_2 eq)
Use of biomass for heat production	Combustion of biomass for local production of 31 PJ heat in households will reduce emissions through the replacement of coal
EU directive on the promotion of the use of energy from renewable sources	Promotes the use of energy from renewable sources (RES) and introduces binding national target for the share of energy from RES in final energy consumption (13 per cent share by 2020)
Nuclear energy	Construction of two new blocks in the Temelín nuclear power plant envisaged (more than 8.4 Mt CO_2 eq)

Major policies and measures	*Examples/comments*
Reduction of the energy intensity of buildings (and energy management)	Includes a higher level of thermal insulation and more effective heating and water heating (3.8 Mt CO_2 eq)
Energy-efficient lighting	Comprises installation of energy-efficient lighting in residential and commercial buildings and for public lighting (1.4 Mt CO_2 eq)
State Programme in Support of Energy Savings and the Usage of Renewable Energy Sources	Promotes measures to increase the effectiveness of energy use, reduce energy intensity and promote the use of renewable and secondary energy sources, in accordance with the approved State Energy Policy and principles of sustainable development
Transport	
Increasing the energy efficiency of passenger cars	Aims to contribute to reaching the EU targets of reducing the average emissions from new automobiles to 120 g CO_2/km by 2015 and then to 95 g CO_2/km by 2020 compared with 170 g CO_2/km in the baseline scenario (2.2 Mt CO_2 eq)
Use of alternative fuels and drives	Aims to increase the fraction of biofuels to 10 per cent of the liquid fuel consumed for transport by 2020 (1.4 Mt CO_2 eq)
Industrial processes	
Use of wood in the construction industry	Envisaged increase in use of wood in the construction industry from 2 to 15 per cent to replace mineral materials (0.3 Mt CO_2 eq)
Integrated pollution prevention and control (IPPC)	Transposition of the EU IPPC directive, setting down the obligations of operators of installations, establishing permitting procedure, establishing the integrated pollution register, setting out competencies of public administration bodies, etc.
Agriculture	
Reduction of methane production in agriculture	Improving the composition of feedstuffs and the management of farming residues (0.5 Mt CO_2 eq)
Binding carbon in arable land	Reducing the intensity and depth of ploughing arable land (1.0 Mt CO_2 eq)
Increased efficiency of agricultural production and environmentally sound farming	Aims: Using better product varieties, rotation and greater efficiency to maintain the level of production with a lower level of emissions, and decreasing N_2O emissions through a reduction in the use of mineral fertilizers (0.8 Mt CO_2 eq)
EU Common Agricultural Policy	Combines a direct subsidy payment for crops and land which may be cultivated with price support mechanisms such as guaranteed minimum prices and production quotas on certain goods within the EU
Forestry	
Afforestation	Targets set for afforestation of 10 per cent of pastures and 5 per cent of farmland by 2020

Major policies and measures	*Examples/comments*
Waste	
Landfill projects	Target set for 59 per cent of methane to be captured and used for the production of electricity and heat (0.1 Mt CO_2 eq)

Note: The greenhouse gas reduction estimates given for some measures (in parentheses) are reductions in CO_2 or CO_2 eq for 2020.

1. Policy framework and cross-sectoral measures

30. In the Czech Republic, MoE is the state administration's supreme body in control of environmental protection and is thus responsible for the implementation of the Convention and its Kyoto Protocol. This responsibility is, however, subsequently divided. The climate change agenda lies within the responsibility of the Climate Change Department, which also includes the Czech national focal point to the Convention. During the review, the Party explained that the Czech Republic's position on all international environmental policies is discussed in an inter-ministerial coordination group before approval by ministries and stakeholders.

31. The responsibility for the preparation and implementation of specific PaMs to mitigate GHG emissions and adapt to climate change lies within the corresponding ministries, including those of the environment, industry, transport, agriculture, education, regional development, health and finance. Without an established coordination mechanism, this division of responsibility implies that the Party's PaMs are not reviewed in the context of its international and domestic climate change related commitments. The ERT encourages the Czech Republic to: (a) enhance the mainstreaming of climate policy, for example by involving all relevant ministries in national climate-policymaking, putting in place an institutionalized process for monitoring mitigation, and documenting climate change related activities across all sectors; and (b) enhance its reporting on the progress of PaMs in mitigating GHG emissions and on the way PaMs are monitored and evaluated over time.

32. The Czech Republic has reported in its NC5 that the regional authorities are responsible for the overall development on their territories and for meeting the needs of their citizens, including water management plans for the areas of the individual river basins, flood prevention measures and the use of RES. The ERT noted that the regional authorities play an important role in the implementation of programmes for energy savings and use of RES, the renewal of buildings (updating of central heating systems and renovation of residential apartment districts), waste management and the improvement of transport services.

33. The Czech Republic, as an EU member State, has the obligation to implement EU environmental legislation. The main PaMs relevant to mitigation of GHG emissions that form part of the EU-wide common and coordinated policy include: (a) the European Union emissions trading scheme (EU ETS); (b) the 2008 EU climate and energy package; (c) the European Union Common Agricultural Policy (EU CAP); (d) the EU landfill directive (directive 1999/31/EC); (e) the EU directive on integrated pollution prevention and control (IPPC directive 2008/1/EC); (f) the EU directive on the energy performance of buildings (dirctive 2002/91/EC); (g) the EU ecodesign directive (directive 2009/125/EC); and (h) the EU regulation setting emission performance standards for new passenger cars (regulation 443/2009/EC).

34. In the Czech Republic, the EU ETS in its second trading period (2008–2012) covers CO_2 emissions from approximately 400 installations in the energy and industrial production. For 2010, the emissions included in the trading scheme correspond to

approximately 60 per cent of total GHG emissions in the Czech Republic. The EU ETS for the third trading period (2013–2020), as part of the EU climate and energy package, establishes a single EU-wide cap on emission allowances, reducing the number of allowances available to the sectors included in the EU ETS (ETS sector) to 21 per cent below the 2005 level in 2020. This cap, together with the reduction of the overall emissions of the EU from the sectors not included in the EU ETS (non-ETS sector) by 10 per cent by 2020 compared with the 2005 level, is to reduce the GHG emissions of the EU to at least 20 per cent below the 1990 level. The other two targets of the EU climate and energy package are: (a) 20 per cent of energy consumed in the EU to come from RES; and (b) a 20 per cent reduction in primary energy use compared with projected levels, to be achieved by improving energy efficiency. Together, these three targets are also known as the EU 20-20-20 targets. According to its climate and energy package, the EU has pledged a unilateral mitigation target of reducing its emissions to 20 per cent below the 1990 level and is currently exploring options for increasing this to 30 per cent.

35. Under the EU effort-sharing decision (decision 406/2009/EC), the Czech Republic has agreed to a maximum 9 per cent increase in its emissions from the non-ETS sector between 2005 and 2020. The European climate policy leaves room for a conditional 30 per cent reduction target for EU emissions, which for the Czech Republic would translate into a 1 per cent increase in its emissions from the non-ETS sector between 2005 and 2020. The EU directive on the promotion of the use of energy from renewable sources (directive 2009/28/EC) sets the target for the Czech Republic as a 13 per cent share of energy from RES in gross final energy consumption by 2020. The reduction in primary energy use, referred to in paragraph 34 above, has not been translated into national targets. The energy efficiency improvements required to reach that EU-wide target are planned to be achieved through minimum energy efficiency standards and rules on labelling for products, services and infrastructure.

36. In addition to the EU-wide common and coordinated PaMs, which are one of the main drivers for the Czech Republic's climate policy (see also information on the draft Climate Change Policy of MoE in para. 39 below), successful national measures promoting the use of RES and the energy efficiency of buildings have been implemented within the framework of the Green Investment Scheme (GIS) (see para. 48 below).

37. The NC5 states that regulatory instruments play an important role in the Czech Republic. They not only impose a number of obligations on the state administration and on natural and legal entities, but also provide for the preparation and revision of important strategic climate change related documents and programmes, such as: (a) the obligation to prepare a National Programme to Abate the Climate Change Impacts in the Czech Republic (Act No. 86/2002 Coll. on protection of the air); (b) the conditions for international emissions trading and the use of the revenue obtained (Act No. 695/2004 Coll. on the conditions of greenhouse gas emission allowance trading); and (c) the coordination and contents of the State Programme in Support of Energy Savings and the Usage of Renewable Energy Sources (Act No. 406/2000 Coll. on energy management). The NC5 further reports that regulatory instruments usually stipulate institutional responsibility for the coordination and implementation of programmes and impose the obligation to regularly update them.

38. In its NC5, the Czech Republic has indicated that a broad strategic framework on climate change exists, consisting particularly of the Strategy of Sustainable Development, the National Strategic Reference Framework, the Strategy of Economic Growth and the Strategy of Regional Development. These have mostly been formulated for the period 2007–2013. Since 2000, an interconnected and integrated system of strategic and operational planning has been gradually created, which will be modified in the coming years so that the Party's international commitments arising from the post-2012 process can

be fulfilled and policies adopted by the EU, especially the 2008 climate and energy package, can be implemented.

39. During the review, the Czech Republic informed the ERT that the Climate Change Policy of the Czech Republic has been formulated as an update to the 2004 National Programme to Abate the Climate Change Impacts in the Czech Republic. Work started in 2008, on the basis of a comprehensive evaluation of the 2004 National Programme. Strategic Environmental Assessment has been performed since September 2009 and a government discussion and possible adoption of the policy are anticipated for 30 September 2010. The policy sets the strategic climate change framework until 2020. The framework focuses on mitigation measures and comprises the Czech contribution to reaching the EU 20-20-20 targets. The main goal is the reduction of the Party's total GHG emissions by 20 per cent or 28 Mt CO_2 eq between 2005 and 2020, which corresponds to an emission level 40 per cent below the 1990 level. This can be broken down to an emission reduction of 40 per cent for the ETS sector and of 11 per cent for the non-ETS sector compared with 2005 levels. The ERT was informed by host-country representatives that these national targets are in line with the EU-level target of a 30 per cent reduction in emissions by 2020 compared with the 1990 level. Regular monitoring, evaluation and updating of the policy are planned. The ERT was also informed that the State Energy Policy is currently being updated and is expected to be adopted at the same time as the Climate Change Policy.

2. Policies and measures in the energy sector

40. Between 1990 and 2008, GHG emissions from the energy sector decreased by 26.6 per cent (41.614 Gg CO_2 eq), mainly driven by the shift from a centrally-planned economy with a large degree of monopolization, which was characterized by a lag in technology development and high energy use. Since 1989, the economy has been transformed into a market economy, resulting in a decline in production, which was accompanied by investment in environmental protection, increased energy efficiency, fuel-switching and increased use of RES.

41. The ERT observed that the energy sector is the main focus area of the Party's PaMs, manifesting the significance of the sector in terms of its contribution to total national GHG emissions. Planned measures in the energy sector include: (a) construction of two new blocks in the Temelín nuclear power plant, which is currently planned by the investor to be completed by 2020 and designed by the Ministry of Industry and Trade – when implemented, this nuclear initiative should result in an emission reduction of more than 8.4 Mt CO_2 eq annually; and (b) construction of three new 440 kW steam-gas blocks, which is expected to bring about an emission reduction of 4.2 Mt CO_2 eq annually through the replacement of the production of 6.6 TWh from coal. Another significant measure presented is the increase of energy efficiency in buildings, consisting of two main elements: (a) a higher level of thermal insulation; and (b) more effective space and water heating. This initiative should bring about a decrease in GHG emissions of 3.6 Mt CO_2 eq annually.

42. As mentioned in paragraph 39 above, the 2004 State Energy Policy of the Czech Republic is currently being updated in the framweork of the draft State Energy Concept to contribute to the achievement of the EU 20-20-20 targets. The update extends the policy's long-term outlook to 2050, whereby up to 2030 it has the character of detailed strategy and between 2030 and 2050 it has the character of a strategic vision. The strategic energy priorities include: (a) establishing a balanced mix of energy sources, with preferential use of all available domestic energy sources (hard and brown coal, uranium and RES), thus achieving an increase in energy security; (b) increasing energy efficiency; and (c) developing network infrastructure. To ensure the protection of the environment, emphasis is put on: low-carbon sources (nuclear and RES); clean coal technologies; the development

of combined heat and power production and the maintenance of the system of district heating supply; and greater use of secondary sources, including waste.

43. During the review, the ERT was provided with more details on the strategic priorities of the updated State Energy Concept. Concerning RES, the potential of hydropower has been almost exhausted. New wind power and solar thermal energy are considered too expensive as mitigation options, with costs of EUR 69.6/t CO_2 eq for solar thermal energy, EUR 72.2/t CO_2 eq for wind power and EUR 237.5/t CO_2 eq for solar electricity production. Meanwhile, the potential for an increase in the use of biomass has been identified, with a more cautious approach adopted towards first-generation liquid biofuels. As the public acceptance of nuclear power is high and domestic uranium reserves exist, the replacement of electricity production by coal with nuclear power has been identified as the main mitigation option. Increased use of nuclear energy in electricity production is envisaged after 2020. Nevertheless, the ERT noted that the targets of the Party's energy strategy remain highly uncertain if the question on the location of the final disposal of nuclear waste is not answered.

44. ***Energy supply***. Between 1990 and 2008, GHG emissions from energy supply increased by 7.5 per cent (4,346 Gg CO_2 eq). The NC5 reports on the 2004 National Programme to Abate the Climate Change Impacts in the Czech Republic, which requires a substantial increase in the share of nuclear and renewable energy sources in the consumption of primary energy sources. The targets of the programme were to increase the share of RES in total primary energy supply to 6 per cent by 2010 and to 20 per cent by 2030, and to reduce the energy intensity of the production, distribution and final consumption of energy to 60–70 per cent of 2004 levels by 2030. During the review, the ERT was informed that the most recent targets for RES are an 8 per cent share of RES in electricity generation by 2010 and a 13 per cent share of RES in final energy consumption by 2020, as established in the EU directive on the promotion of the use of energy from renewable sources, mentioned in paragraph 35 above. In the first quarter of 2009, the share of RES in electricity generation in the Czech Republic was 6.5 per cent.

45. Currently, the major share of electricity in the Czech Republic, approximately 60 per cent, is generated by brown coal or lignite-fired power plants, mainly because this is the Party's main domestic resource of fuel. The Czech Republic has no plans to explore the potential for carbon dioxide capture and storage in its territory. The Czech Government plans to invest in clean coal technologies to replace some of the existing facilities and to reduce coal consumption for electricity generation to a share of approximately 20 per cent by 2030. It also plans to increase its use of natural gas, in particular in peak load plants and as a supplement in cogeneration.

46. The ERT observed that the Party's NC5 did not provide sufficient information on specific measures in the energy supply sector; however, additional information was provided during the review. The ERT recommends that the Czech Republic provide more complete information on its PaMs in the energy supply sector and their estimated effects in its next national communication.

47. ***Residential and commercial sectors***. In the residential and services sector, emissions decreased by 65 per cent (23,045 Gg CO_2 eq) between 1990 and 2008, owing mainly to a switch from solid fuels to gas, an increased share of district heating in residential heating, and several measures to increase energy efficiency. The main measures in the sector include: the thermal insulation of existing buildings; the construction of new buildings in accordance with stricter building codes and the passive energy standard; and the use of RES for space and water heating. The latter measure comprises the replacement of environmentally unfriendly heating, the installation of low-emission biomass-fired energy sources and efficient heat pumps in existing and new buildings, and the installation of solar thermal collectors.

48. All these measures are financed by GIS, the Czech subsidy programme for energy savings and renewables (see para. 84 below). The ERT noted that this programme was included in the NC5 as a planned measure, which is in accordance with the UNFCCC reporting guidelines. The Party did not provide information in the NC5 on PaMs in the commercial sector; during the review it explained that there are currently no implemented or planned PaMs in the commercial sector. The ERT encourages the Czech Republic to include this information, if applicable, in its next national communication.

49. ***Transport sector***. The trend in GHG emissions from fuel combustion during the 1990–2008 period showed a notable increase in the transport sector (by 145 per cent or 10,665 Gg). The NC5 states that the number of passenger vehicles almost doubled from 23 vehicles per 100 inhabitants in 1990 to 41 vehicles per 100 inhabitants in 2007, corresponding to a stock of 4.28 million vehicles in 2007. Information provided to the ERT during the review showed that between 1990 and 2007 the number of registered passenger cars increased by 94 per cent and that of heavy-duty vehicles decreased by 26 per cent.

50. The ERT noted that the Transport Policy of the Czech Republic for 2005–2013 is the basic policy document for the Party's transport sector. Its objective is to harmonize conditions in the transport market and provide good-quality and environmentally sustainable transport. The NC5 reports that the Transport Operational Programme 2007–2013 is an important strategic document and the implementation of the programme is underpinned by finances from the EU funds. The programme, reported to be the largest operational programme in the Czech Republic, involves improving the quality of the infrastructure and mutual interconnections of railway, highway and river transport within the framework of the Trans-European Transport Network.

51. The Czech Republic, in its NC5 and during the review, reported on several programmes to support environmentally sound transport. These include: (a) a programme providing financial support for the renewal of public buses; (b) regional operational programmes encompassing the improvement of infrastructure and the support of public transport; (c) preferential traffic measures, such as separate lanes for buses; and (d) the National Cycling Strategy, which comprises bike-and-ride systems and the construction of cycle paths. Furthermore, the draft Climate Change Policy of MoE proposes support for sustainable city mobility and for the development of systems of combined transport in freight transport.

52. The NC5 also reports on other specific PaMs in the transport sector, including: (a) the reduction of emissions specifically from newly sold passenger cars to a value of 120 g CO_2/km by 2012, in accordance with the EU regulation setting emission performance standards for new passenger cars; (b) a target of a 5.75 per cent share of biofuels in the total fuel used for transport by 2010, in accordance with the EU directive on the promotion of the use of biofuels or other renewable fuels for transport (directive 2003/30/EC); and (c) a target to increase the share of energy from RES used in all forms of transport by 2020 to 10 per cent of the final consumption of energy in transport, in accordance with the EU directive on the promotion of the use of energy from renewable sources.

53. Air transport will be included in the EU ETS from 2012 onwards, when the EU ETS will be extended to include emissions from all flights with an initial or final destination in one of the EU member States, regardless of the origin of the airline operator. This common and coordinated EU-wide measure is intended to stabilize emissions from air transport at the average level of emissions achieved during the 2004–2006 period.

54. The ERT noted that the measures in place or planned might not be sufficient to considerably change the increasing trend in emissions in this most difficult sector. The plans presented by host-country representatives to the ERT during the review seem to

encompass a continuous extension of the transport infrastructure, which is, on the contrary, likely to induce even more transport activity and increase emissions as a result.

55. ***Industrial sector***. Between 1990 and 2008, GHG emissions from the industrial sector decreased by 65.7 per cent (30,788 Gg CO_2 eq). The ERT noted that the NC5 provided information on a number of PaMs, including legislation, which cover aspects of energy use in the industrial sector, including small and medium-sized enterprises. These include measures to increase energy efficiency, reduce energy intensity and promote the use of renewable and secondary energy sources, in accordance with the approved State Energy Policy and principles of sustainable development. One of the main measures in this sector is the EU ETS, which covers CO_2 emissions from industrial facilities for the production of chemicals, metals, coke, mineral products and paper. The NC5 reports the mitigation effect of the EU ETS, including energy production facilities, as a reduction of 3–5 Mt CO_2 in 2005 and 0.5–1 Mt CO_2 for 2006 and 2007, thanks to the strong decrease in the price of allowances in those years.

3. Policies and measures in other sectors

56. Between 1990 and 2008, GHG emissions from industrial processes (including solvent and other product use), agriculture and waste decreased by 31 per cent (12,159 Gg CO_2 eq), mainly driven by the restructuring of the economy. The NC5 reports that the transition from a centrally-planned to a market-based economy led to a decline in production, which was followed by an increase in investment in environmental protection.

57. ***Industrial processes***. Between 1990 and 2008, GHG emissions from the industrial processes sector decreased by 27 per cent (5,251 Gg CO_2 eq). The trend in the GHG emissions from industrial processes showed fluctuations during the period from 1990 to 2008: a very rapid decrease in emissions in the early 1990s was followed by fluctuations in emissions, with the lowest level of emissions in 1999 and then a subsequent emission increase. The emission decrease between 1990 and 2008 is visible across all categories in the sector, but was partly counterbalanced by an increase in F-gas emissions.

58. The NC5 mentions the implementation of: the EU ETS (directive 2003/87/EC); the EU regulation on certain fluorinated greenhouse gases (regulation 842/2006/EC); and the IPPC directive. The ERT noted that the information provided did not include a discussion on how these PaMs affect GHG emissions in the industrial processes sector in the Czech Republic.

59. During the review, the ERT was provided with additional information on the analysis of reduction potentials and abatement costs, prepared within the framework of the draft Climate Change Policy of MoE. The ERT noted that emission reductions in industry were associated with significant negative costs (EUR –109.4/t CO_2 eq), but was informed by host-country representatives that these favourable abatement costs were due to including the decommissioning of plants as a measure. The ERT encourages the Czech Republic to include information on how its PaMs in the industrial processes sector affect its GHG emissions, along with corresponding reduction potentials and abatement costs, if available, in its next national communication.

60. ***Agriculture***. Between 1990 and 2008, GHG emissions from the agriculture sector decreased by 48 per cent (7,613 Gg CO_2 eq), owing to structural changes in the agriculture sector, for example a decline in numbers of livestock. The ERT noted that the NC5 did not provide information on any specific PaMs in the agriculture sector. During the review, the ERT was provided with additional information on the implementation of measures from the Rural Development Programme and the EU CAP. In general, the Czech Republic considers that many of its PaMs in the agriculture sector have effects in terms of mitigation, with adaptation as an ancillary benefit. Land consolidation is considered to be one of the most

important measures, because, for historical reasons, many agricultural fields are subject to multiple ownership, which hinders the implementation of specific measures. The ERT recommends that the Czech Republic include details of its PaMs in the agriculture sector in its next national communication.

61. ***LULUCF***. The LULUCF sector was a net sink of 4.8 Tg CO_2 in the Czech Republic in 2008, and net GHG removals have increased by 1,149 Gg CO_2 since 1990. This trend was mainly driven by a reduction in emissions from cropland (by 87 per cent or 1,165 Gg CO_2) and an increase in CO_2 removals from grassland (by 201 per cent or 257 Gg CO_2). The ERT observed that the NC5 did not provide information on any specific PaMs in the LULUCF sector, although one measure, entitled Support for afforestation of unused agricultural areas, was included in a table in the annex to the NC5. During the review, the ERT was provided with additional information on the implementation of the National Forest Strategy, for example policies to increase forest cover and to change the composition of the country's tree species by the provision of subsidies. The ERT recommends that the Party provide details of its PaMs in the LULUCF sector in the main body of its next national communication, and also that a textual description of these PaMs be provided.

62. ***Waste management***. Between 1990 and 2008, GHG emissions from the waste sector increased by 36 per cent (955 Gg CO_2 eq), mainly driven by the increase in emissions from solid waste disposal and waste incineration. The ERT observed that the NC5 did not provide information on any specific PaMs in the waste sector, but two legislations on waste management were presented during the review, namely Act No. 185/2001 on Waste and Act No. 477/2001 on Packaging. Further, the Party explained that two EU directives underpin the national legislation on waste: the Waste Framework Directive (directive 2008/98/EC) and the landfill directive. The ERT recommends that the Czech Republic include details of its PaMs in the waste sector in its next national communication.

63. The ERT encourages the Czech Republic to study in more detail the estimated effects of implemented, planned and potential additional PaMs particularly in the transport sector, as achieving a change in the trend in the emissions from this sector might be key to reaching the 2020 domestic emission target for the non-ETS sector set by the EU effort-sharing decision as part of the 2008 EU climate and energy package.

64. With regard to enhancing the transparency of the reporting in the PaMs chapter of the NC5, the ERT encourages the Czech Republic to undertake the following in its next national communication:

(a) Expand on its reporting of its PaMs in the non-energy sectors;

(b) Include information on fiscal instruments relevant to climate change mitigation, such as the tax on used cars;

(c) Improve the presentation of PaMs in the context of its climate change related commitments (under Article 4, paragraph 2(a), of the Convention and Article 2 of the Kyoto Protocol);

(d) Provide a clear explanation of how its PaMs affect its GHG emissions in general, in addition to mentioning specific sectors impacted;

(e) Provide cost estimates in the description of its PaMs;

(f) Enhance the narrative reporting of its PaMs by gas;

(g) Enhance its reporting of planned measures, as most of this information was made available following requests for additional information during the review, for example with regard to measures in the transport sector;

(h) Report more clearly on the State Programme in Support of Energy Savings and the Usage of Renewable Energy Sources.

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

65. In its NC5, the Czech Republic has reported information on 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. Further information on how the Czech Republic 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.

66. The NC5 underlines key measures to minimize adverse effects. These include: reducing and phasing out market imperfections; fiscal incentives; tax and duty exemptions; subsidies; and the provision of support for technology and capacity development through development assistance. Reported social and environmental measures include the management and renewal of water resources, the use of solar energy in schools and the use of RES in a remote village community.

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

67. In its NC5, the Czech Republic has reported on three GHG emission scenarios until 2020. No updated emission projections were provided during the review, but preliminary information on the ongoing work on updating energy scenarios was provided.

1. Projections overview, methodology and key assumptions

68. The GHG emission projections provided by the Czech Republic in its NC5 include a 'with measures', a 'with additional measures' and a 'without measures' scenario until 2020, presented relative to actual inventory data for 2007. Definitions of the three scenarios are provided in the NC5, but the ERT noted that the definitions in the NC5 were not consistent with those presented during the review. The definitions presented during the review were as follows: the 'with measures' scenario takes into consideration measures which came into force in the 2000–2007 period; the 'with additional measures' scenario takes into account measures financed by GIS, measures adopted on the basis of the 2008 EU climate and energy package, measures introduced on the basis of the EU regulation setting emission performance standards for new passenger cars, measures based on the EU directive on the promotion of the use of energy from renewable sources, as well as other minor measures, such as the EU fuel quality directive (directive 2009/30/EC). The ERT recommends that the Czech Republic provide consistent definitions of scenarios in its next national communication.

69. The Czech Republic did not provide four reporting elements required by the UNFCCC reporting guidelines: projections presented on a sectoral basis, using the same sectoral categories used in the PaMs section; projections presented on a gas-by-gas basis for HFCs, PFCs and SF_6 (treating HFCs and PFCs collectively in each case); projections in an aggregated format for each sector, using global warming potential values; and emission projections related to fuel sold to ships and aircraft engaged in international transport. The ERT recommends that the Czech Republic improve the transparency and completeness of its reporting by including these reporting elements in its next national communication.

Also, the ERT encourages the Czech Republic to clarify in the headings of tables whether projections are provided with or without LULUCF and to report consistent information across sectors in the projections chapter. Furthermore, the ERT reiterates the recommendation made in the previous review report that projected emissions from international bunkers should be reported separately.

70. The methodology used for the preparation of the emission projections in the Party's NC5 is in accordance with the methodology employed for the preparation of the projections in its third national communication and NC4, which, among other things, allows for a comparison of the results. The methodology includes the following inputs: GHG inventory data; selection of base and final year and interim years for calculating the projections; selection of methodology and models for calculating the projections; establishment of assumptions; definitions of scenarios; and a sensitivity analysis to estimate the impact of selected assumptions.

71. The main assumptions defined in the NC5 or provided during the review were in relation to the following key issues: (a) future technological development; (b) demographic trends; (c) economic development (i.e. GDP and gross value added); (d) global prices of fuel and energy; (e) energy consumption in some sectors; (f) production of the main energy-intensive materials; (g) numbers of animals and management of lands; (h) expected growth in activity in the transport of passengers and goods; (i) number and size of housing units; (j) a CO_2 certificate price of EUR 20/t; (k) the fact that the Temelin and Dukovany nuclear plants will continue normal operations until 2020 and no new nuclear power plant should be taken into account; and (l) the fact that the consumption of brown coal or lignite will be reduced, as territorial environmental limits on mining will be retained at the ČSA mine and partly relaxed at the Bilina mine.

72. The ERT noted that the assumptions used for the transport sector are overly optimistic, a finding that was confirmed by the Czech Republic during the review. In particular, an assumption was made that energy efficiency in transport will greatly improve, but no specific study to support such an assumption was presented to the ERT during the review. Another assumption was made that biofuels will represent 14.8 per cent of the liquid fuel consumed for transport (petroleum and biofuels) in 2020, which is far above the EU target of 10 per cent. The ERT noted that there is no incentive for fuel providers in the Czech Republic to increase the share of biofuels beyond the set EU target.

73. The ERT commends the Czech Republic for its efforts to present background information during the review and encourages the Party, in its next national communication, to: (a) improve the description of the model used to calculate projections, especially its characteristics, strengths and weaknesses; (b) provide more details on activity data, such as energy consumption by subsector in the energy sector – in order to enhance transparency, these data should be reported separately for energy industries, households and commerce, transport and agriculture; (c) provide more details on activity data used to calculate fugitive emissions; and (d) provide information on the expected changes in emission factors in the industrial processes sector.

74. Energy scenarios are currently being updated within the framework of both the draft Climate Change Policy and the draft State Energy Concept of the Czech Republic. The ERT appreciates that the Czech Republic provided information on these scenarios during the review and it noted that, in these scenarios, assumptions differ between the two policies as to future developments concerning the fuel mix, the future of nuclear energy and the production of mines, as these things depend on future political decisions. The ERT encourages the Czech Republic to revisit these assumptions and the resulting GHG emission projections once political decisions on its climate and energy policy have been taken.

2. Results of projections

75. According to the scenarios presented in the Czech Republic's NC5 (see table 4 and the figure below), the Czech Republic expects to meet its target under the Kyoto Protocol by domestic efforts. The Party's projected level of emissions in 2010 of 149.9 Tg CO_2 eq is significantly below its Kyoto target of 178.8 Tg CO_2 eq, even under the 'without measures' scenario. The analysis of the Party's emission trends since 1990 is provided in paragraph 14 above.

Table 4
Summary of greenhouse gas emission projections for the Czech Republic

	Greenhouse gas emissions (Tg CO_2 eq per year)	*Changes in relation to base year level (%)*	*Changes in relation to 1990 level (%)*
Inventory data 1990[a]	195.18	0.48	NA
Inventory data 2008[a]	141.41	–27.2	–27.6
Kyoto Protocol base year[b]	194.25	–	–0.48
Kyoto Protocol target[b]	178.70	–8	–8.4
'Without measures' projections for 2010[c]	149.9	–22.8	–23.9
'With measures' projections for 2010[c]	140.1	–27.9	–28.2
'With additional measures' projections for 2010[c]	134.9	–30.5	–30.9
'Without measures' projections for 2020[c]	146.2	–24.7	–25.1
'With measures' projections for 2020[c]	124.2	–36.0	–36.3
'With additional measures' projections for 2020[c]	116.2	–40.2	–40.5

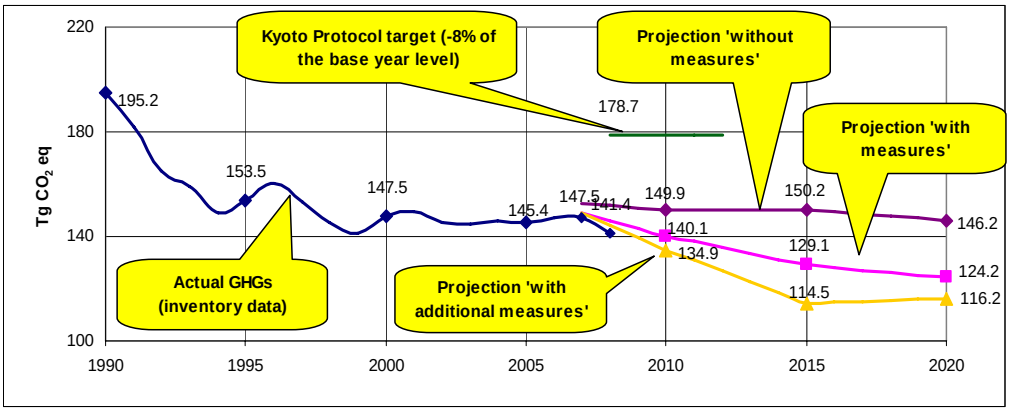
Abbreviation: NA = not applicable.

[a] *Data source*: The Czech Republic's 2010 greenhouse gas inventory submission; the emissions are without land use, land-use change and forestry.

[b] *Data source*: Based on the initial review report contained in document FCCC/IRR/2007/CZE.

[c] *Data source*: The Czech Republic's fifth national communication.

Greenhouse gas emission trends and projections in the Czech Republic



Sources: (1) Data for the years 1990–2008: the Czech Republic's 2010 greenhouse gas inventory submission; the emissions are without land use, land-use change and forestry (LULUCF); (2) Data for the years 2009–2020: the Czech Republic's fifth national communication; the emissions are without LULUCF.

76. By 2020, the Party's total GHG emissions are projected to decrease by about 36 per cent in the 'with measures' scenario and by about 40 per cent in the 'with additional measures' scenario, compared with the base year level. As mentioned in paragraph 34 above, in the 2008 EU climate and energy package separate emission targets are set for the ETS and non-ETS sectors. The emission projections presented in the Party's NC5 do not differentiate between these sectors. During the review, the Czech Republic provided an absolute number for a 'overall' 2020 emission target, equal to 134.4 Mt CO_2 eq. According to the reported projections, in 2020 the Party's GHG emissions will be 9 Mt CO_2 eq below this target in the 'with measures' scenario and 18 Mt CO_2 eq below in the 'with additional measures' scenario. With regard to the conditional European target (a 30 per cent reduction in emissions), the projections show that additional measures are necessary to reach the 'overall' emission target of 116.9 Mt CO_2 eq derived from the European target. However, the results of these calculations are preliminary, because meeting the overall emission target does not automatically imply that specific targets for the non-ETS and ETS sectors are also met. The ERT encourages the Czech Republic to put more emphasis on the projections for the non-ETS sector, since the ETS sector is expected to fulfil its requirements, as installations covered by the EU ETS face severe consequences in the case of non-compliance.

77. Under the 'with measures' scenario, the trends in emissions from the main sectors are projected as follows for the period 2005–2020: an emission reduction of about 23 per cent in energy industries, a reduction of 20 per cent in manufacturing industries and construction, a reduction of 33 per cent in other sectors (energy consumption in the agriculture, household, commercial and other sectors) and an emission increase of approximately 12 per cent in transport. A sensitivity analysis assessing the impact of GDP is presented in the NC5, which shows that stronger growth in GDP will have the greatest effect on the transport sector, as mobility will increase with improved living standards.

78. With regard to the GHG emission projections for the transport sector, the ERT noted that the results could be overly optimistic, mainly because of the assumptions made (see para. 72 above). As a result of these assumptions, emissions from the transport sector in the 'with measures' scenario are projected, according to the NC5, to increase by only 11.8 per cent between 2005 and 2020; however, according to the Czech GHG inventory, these emissions already increased by 7.7 per cent within just two years, between 2005 and 2007. In addition, a comparison of the NC5 projections of energy consumption in the transport

sector, which underpin the emission projections, with other studies (e.g. data for 2008 from the former Directorate-General for Transport and Energy of the European Commission) shows a notable difference: an increase in energy consumption of 36 per cent between 2005 and 2020 is reported in the NC5 compared with an increase of about 45–65 per cent over the same period according to the studies. As controlling emission levels in this sector might be key to reaching the domestic 2020 emission target, the ERT encourages the Czech Republic to study the impact of planned and potential additional PaMs in the transport sector.

3. Total effect of policies and measures

79. In its NC5, the Czech Republic presents its projected emissions under the three scenarios defined in paragraph 68 above for the years 2005 to 2020. Most of the relevant information on factors and activities for each sector for the years 2005 to 2020 is provided. In addition, the expected emission reductions and affected sectors and gases are provided for each of the Party's PaMs, which are categorized as implemented or prepared.

80. However, the ERT noted that the Czech Republic did not provide an estimate of the total effect of implemented and adopted PaMs. Data not reported in the NC5 were provided during the review. According to these data, the estimated total effect of adopted and implemented PaMs is an emission reduction of 22 Mt CO_2 eq in 2020. The effect of the 'additional measures' is estimated to be a reduction of a further 8 Mt CO_2 eq in 2020. PaMs implemented in the energy sector will deliver the largest emission reductions, followed by those implemented in the agriculture and transport sectors. The Party's most effective PaMs and the drivers behind its GHG emission reductions are described in annex 10.3 to the NC5, including the EU ETS, the set of measures in the transport sector, and programmes to increase energy efficiency and generally the state of environment. Table 5 provides an overview of the total effect of PaMs as provided by the Czech Republic.

81. The ERT recommends that the Czech Republic improve the completeness of its reporting by providing in its next national communication an estimate of the total effect of its PaMs, and encourages the Czech Republic to list the measures taken into account for each scenario and provide the starting point (year) of implementation of each of the different measures.

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

	Effect of implemented and adopted measures (Tg CO_2 eq)	*Relative value (% of 1990 emissions)*	*Effect of planned measures (Tg CO_2 eq)*	*Relative value(% of 1990 emissions)*	*Effect of implemented and adopted measures (Tg CO_2 eq)*	*Relative value (% of 1990 emissions)*	*Effect of planned measures (Tg CO_2 eq)*	*Relative value(% of 1990 emissions)*
Sector	*2010*				*2020*			
Energy (without CO_2 from transport)	5.3	2.7	5.0	2.5	15.6	8.0	4.2	2.2
Transport – CO_2	0.9	0.4	0	0	1.7	0.9	3.1	1.6
Industrial processes	0	0	0	0	0	0	0	0
Agriculture	3.7	1.9	0.3	0.2	5.0	2.5	0.8	0.4
Land use change and forestry	0	0	0	0	0	0	0	0

Sector	*Effect of implemented and adopted measures (Tg CO_2 eq)*	*Relative value (% of 1990 emissions)*	*Effect of planned measures (Tg CO_2 eq)*	*Relative value(% of 1990 emissions)*	*Effect of implemented and adopted measures (Tg CO_2 eq)*	*Relative value (% of 1990 emissions)*	*Effect of planned measures (Tg CO_2 eq)*	*Relative value(% of 1990 emissions)*
	2010				*2020*			
Waste management	–0.1	–0.0	–0.1	–0.0	–0.3	–0.0	–0.1	–0.0
Total	**9.8**	**5.0**	**5.2**	**2.7**	**22**	**11.3**	**8.0**	**4.1**

Source: Data provided by the Czech Republic to the expert review team during the review.

Note: The total effect of implemented and adopted policies and measures is defined as the difference between the 'without measures' and 'with measures' scenarios; the total effect of planned policies and measures is defined as the difference between the 'with measures' and 'with additional measures' scenarios. Negative signs in the table mean negative mitigation effects (i.e. increases in emissions).

4. Supplementarity relating to mechanisms pursuant to Articles 6, 12 and 17

82. The Czech Republic, in its NC5, has provided sufficient information indicating that it is not using the mechanisms under Articles 6, 12 and 17 of the Kyoto Protocol to meet its Kyoto target for the first commitment period.

83. The Czech Republic is a recipient country of joint implementation (JI) projects and had already approved a total of 42 JI projects by May 2009. An emission reduction of about 3.5 million emission reduction units for the 2008–2012 period is expected, which can be transferred to the investors in the projects. No clean development mechanism projects have yet been supported. The expected emission surplus in the Czech Republic for the period 2008–2012 amounts to approximately 150 million assigned amount units (AAUs), of which approximately 100 million units are expected to be sold in international emissions trading, including 75 million units that have already been contracted.

84. The revenue from the sale of AAUs is used entirely for financing GIS, the Czech subsidy programme for energy savings and renewables. This programme was launched in April 2009, providing funds until the end of 2012, and was designed to achieve a long-term reduction in emissions, extending beyond 2012, owing to the sustainability of the financed measures. During the review, the ERT was informed that by June 2010 the programme had received 33,000 applications, that 9 billion Czech crowns (half of the total fund available) has already been invested and that the programme is anticipated to achieve emission reductions of 1.1 Mt CO_2 eq/year.

D. Vulnerability assessment, climate change impacts and adaptation measures

85. In its NC5, the Czech Republic has provided the required information on the expected impacts of climate change in the country and on adaptation options. Compared with in its NC4, the Czech Republic has increased the coverage of its vulnerability assessment in its NC5 to cover biodiversity, energy production and industries, and urban agglomerations. Table 6 summarizes the information on vulnerability and adaptation to climate change presented in the NC5.

86. The Czech Republic used the regional climatic model ALADIN – CLIMATE/CZ to estimate the impacts of climate change in the country. The results indicate that average temperatures will increase by 0.24 ^{o}C every 10 years and that the difference in temperature

between the seasons will decrease. Simulated changes in total precipitation indicate the possibility of a slight increase in the annual totals, by an average of approximately 4 per cent up to 2030, compared with in the 1961–1990 period. Intense precipitation events that occur during summer thunderstorms are projected to present a greater risk of flash floods, even though the projected changes in total precipitation over the long term are small.

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

Vulnerable area	*Examples/comments/adaptation measures reported*
Water regime	*Vulnerability*: Reduction in average and minimum flow rates and minimum outflow rates or groundwater; changes in annual variation of flow rates; reduction in the supply function of groundwater reservoirs; worsening of surface water quality (eutrophication); worsening and lengthening of water deficits in the summer and winter months; increased frequency of flash floods; reduction in guaranteed water withdrawals *Adaptation*: Increased safety of water works; flood prevention measures; reduction of water losses; restoration of river systems; landscape programme
Agriculture	*Vulnerability*: Shift in and prolonging of the vegetation period, permitting the onset of additional phenophases; acceleration of vegetation in the spring, with greater risk of damage to plants by late frost; loss of moisture; increased water erosion of farmland *Adaptation*: Land-use planning; agroenvironmental measures; renewal and reconstruction of fish ponds and agricultural water reservoirs; irrigation and drainage of agricultural properties
Forest management	*Vulnerability*: Risk of decomposition of unstable maturing and mature stands of unsuitable spruce single-species stands; increased biotic damage under extreme weather conditions; increased susceptibility to fungal diseases and insect pests *Adaptation*: Increased potential for diversification of forests through species, genetic and age diversification of stands; use of sounder means of management and elimination of pressure from game; reduction of the risk of increases in the population of insect pests, vascular mycoses and root rot
Human health	*Vulnerability*: Heat stresses; reduced air quality; extreme weather conditions; increased occurrence of some infections (tick-borne encephalitis, Lyme borreliosis and Leishmaniasis) *Adaptation*: Introduction of a system of warning forecasts of the level of tick activity; regular compulsory education of public-health workers on environmental issues; public-awareness programmes
Biodiversity	*Vulnerability*: Endangering of species of flora and fauna bound to specific habitats (glacial cirques, parts of mountains above the tree line, etc.); increased spreading of invasive, non-indigenous species; human activity connected with climate change and necessary adaptations (construction of dams, and cultivation of plants for production of biofuels) *Adaptation*: Regeneration of the urban landscape; renewal of green areas in settlements and creation of ‘green rings’ around settlements; rescue programmes for specially protected species of fauna and flora; prevention of introduction, regulation and liquidation of populations of invasive species

Vulnerable area	*Examples/comments/adaptation measures reported*
Energy production and industries	*Vulnerability*: Poor availability of water required for cooling thermal power plants; reduced availability of some forms of production of electrical energy (e.g. hydropower plants); impacts of extreme weather conditions on energy production infrastructure; changes in demand for energy (reduced in winter, and increased in summer owing to air conditioning) *Adaptation*: Measures under preparation
Tourism and recreational potential	*Vulnerability*: Shortening of the winter ski season; lack of water resources for and increase in energy intensity of the production of artificial snow; reduction in the quality of bathing water (occurrence of blue-green algae) *Adaptation*: Measures under preparation
Urban agglomerations	*Vulnerability:* Danger of inundations and floods; reduced quality of drinking and utility water *Adaptation*: Measures under preparation

87. The NC5 exhibits a good balance between vulnerability assessment and adaptation measures. The Czech Republic identifies the water management sector as its most vulnerable sector to climate change; thus, this sector is also the focus of adaptation measures. The increased risk of floods and the increased frequency of flood episodes are identified as the biggest threats and, consequently, the most important measure in place is the Prevention of Floods Programme.

88. The NC5 reflects the political will in the Czech Republic to support vulnerability assessment and implement adaptation measures, as regulations and resolutions are adopted at a high level of the country's governance system and implemented at various levels. Currently, the Party is working on a new Strategy for Climate Change Adaptation in the Czech Republic. Input is expected to come from the results of an ongoing research programme and from the work of several established working groups.

89. The Czech Republic has a number of response measures in place, including the use of various forecasts to minimize climate change impacts, such as forecasts of tick activity. In addition, a number of regulations and resolutions have been adopted in order to minimize impacts on, among others, the water resources, agriculture and forestry sectors. Measures targeting some of the other vulnerable areas, such as tourism and recreational potential, are under preparation.

90. To enhance the transparency of its reporting, the ERT encourages the Czech Republic to provide, in its next national communication, more information on the climate models and various approaches and methodologies used for its vulnerability assessments.

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

91. The Czech Republic is not a Party included in Annex II to the Convention and is therefore not obliged to adopt measures and fulfil obligations as defined in Article 4, paragraphs 3, 4 and 5, of the Convention. However, its NC5 did include some relevant information, and additional information was provided during the review. The ERT assessed this information and its findings are reflected in this report.

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

92. The Czech Republic has reported on its provision of financial assistance in the form of official development assistance (ODA), covering the period from 2003 to 2006. This ODA grew steadily over the reported period, amounting to 0.12 per cent of gross national income in 2006 compared with 0.101 per cent in 2003. In extending its provision of ODA, the Czech Republic is implementing its commitments as a member State of the EU and of the Organisation for Economic Co-operation and Development.

93. In its NC5, the Czech Republic has provided information on multilateral and bilateral channels. It has a list of eight countries that are designated as having long-term priority in their foreign development cooperation, while two other countries are designated as medium-term priorities. Table 7 summarizes the information on financial resources that was provided by the Czech Republic during the review.

Table 7
Summary of information on financial resources

	Years of disbursement					
Channel of financial resources	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*
Official development assistance (ODA) (ODA as a percentage of GNI)	0.114	0.12	0.11	0.12	0.12	–
Climate-related aid in bilateral ODA (USD million)	–	3.03	5.51	7.67	6.57	–
Contributions to the GEF (USD million)	5.86	–	–	–	–	6.05
Pledge for GEF replenishment (SDR million)	4.00	–	–	–	–	4.00
Other (bilateral/multilateral) (USD million)	–	0.371	0.459	0.484	0.585	0.583

Note: "Other" includes contributions to other international organizations, institutions and conventions which are at least partly related to climate change, such as the Montreal Protocol and the Convention on Biological Diversity.

Abbreviations: GEF = Global Environment Facility, GNI = gross national income, SDR = special drawing rights.

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

94. The ERT commends the Czech Republic for providing information on the assistance it has made available to developing countries, making use of its fresh experience as a recipient of modern technologies and know-how. The reported projects were financed within the framework of foreign development assistance in the period 2003–2009 and were related to the reduction of GHG emissions, the modernization of energy-production facilities and systems, the use of alternative energy sources, and adaptation to climate change.

F. Research and systematic observation

95. In its NC5, the Czech Republic has provided information on its actions relating to research and systematic observation, addressing both domestic and international activities,

including its participation in the activities of the World Climate Programme, the Global Climate Observing System (GCOS) and the Intergovernmental Panel on Climate Change. The NC5 also reflects action taken to support related capacity-building in developing countries.

96. Research projects at the national level include: (a) the refinement of current estimates of the impacts of climate change in the water management, agriculture and forestry sectors, and the development of proposals for adaptation measures; (b) the development of a climate atlas and the regionalization of outputs of models of general atmospheric circulation for the territory of the Czech Republic; (c) the study of the carbon cycle in the terrestrial ecosystem of the Czech Republic; (d) the evaluation of the spring floods that occurred in 2006 in the Czech Republic; and (e) the assessment, in the agriculture sector, of the increase in climatic drought.

97. At the international level, the Czech Republic participates in the activities of the World Meteorological Organization (WMO) and the United Nations Environment Programme and cooperates in a number of international projects concerned with the climate, such as the Regional Cooperation for Limited Area modelling in Central Europe project. The participation of the Czech Republic in international projects concerned with modelling the climate system and estimating the impacts of climate change has expanded substantially in recent years. The ERT noted that the Czech Republic regularly provides assistance to developing countries in the form of training courses, as well as providing assistance in the installation and calibration of instruments (e.g. for the monitoring of the ozone layer).

98. The Czech Republic's participation in GCOS activities is limited to meteorological atmospheric observations, such as: in the network of ground-level stations of the Global Sensor Networks at the Milešovka observatory; in the Global Atmosphere Watch network at the Solar and Ozone Observatory, in Hradec Králové, of the Czech Hydrometeorological Institute (CHMI); and at the CHMI observatory, for monitoring the quality of the natural environment at the regional level.

99. Systematic observation of the climate system is carried out mainly by CHMI, which acts as the state institute for air quality, hydrology, water quality, climatology and meteorology. It also has the competence to establish and operate state monitoring and observation networks, including international data exchange pursuant to the principles of WMO.

G. Education, training and public awareness

100. In its NC5, the Czech Republic has provided information on its actions relating to education, training and public awareness at both the domestic and the international level. The Party has provided extensive information on: the policy framework; the education system; education and public-awareness programmes; education, information and consulting centres; funding; and international activities. Important actors responsible for education, training and public awareness in the Czech Republic include: the intersectoral working group on education and awareness at MoE; the working group for education on sustainable development within the Government Council for Sustainable Development; the country's regions; and environmental education, information and consulting centres.

101. The State Environmental Policy 2004–2010 and the National Programme for the Development of Education in the Czech Republic guide the country's environmental education and awareness programmes on climate change. In its NC5, the Czech Republic has reported on obligatory environmental education at elementary schools (formal education) and on activities taking place at employers' facilities, private educational

institutions, non-governmental organizations (NGOs), school facilities and other organizations (non-formal education).

102. MoE publishes a number of publications, periodicals and other training materials. The ministry facilitates free public access to information on climate change via its website and is preparing an e-learning course for university teachers, students and those in public administration. In addition, there are 50 eco-counselling centres aiming to raise public awareness in relation to climate change. NGOs are involved in many areas of environmental education and awareness-raising, for example the dissemination of the 'Green Pack' teaching material.

103. Organizations in the Czech Republic participate in a number of international projects to raise public awareness, such as the GLOBE Programme, the 'Clean Up the World' programme, and several bilateral cross-border projects in the areas of environmental consulting, environmentally oriented kindergartens and education for children and young people.

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

104. The Czech Republic has provided all supplementary information under Article 7, paragraph 2, of the Kyoto Protocol in its NC5. The supplementary information is placed in different sections of the NC5. Table 8 provides an overview of supplementary information under Article 7, paragraph 2, of the Kyoto Protocol as well as references to the NC5 chapters in which 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

Supplementary information	*Reference*
National registry	NC5 chapter 3.4
National system	NC5 chapter 3.3
Supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17	NC5 chapter 5.5
Policies and measures in accordance with Article 2	NC5 chapters 4.2, 4.3 and 4.4
Domestic and regional programmes and/or legislative arrangements and enforcement and administrative procedures	NC5 chapter 4.1
Information under Article 10	
Article 10(a)	NC5 chapter 3
Article 10(b)	NC5 chapters 4.1, 4.2, 4.3 and 4.4
Article 10(c)	NC5 chapter 7.3
Article 10(d)	NC5 chapter 8
Article 10(e)	NC5 chapter 9
Financial resources[a]	NC5 chapter 7

Abbreviation: NC5 = fifth national communication.

[a] As a country with an economy in transition, the Czech Republic does not have to report on the implementation of Article 11 of the Kyoto Protocol, including on the provision of new and additional resources.

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

105. As a part of its 2010 annual submission, the Czech Republic 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. During the in-country review, the Czech Republic provided the ERT with the 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. The ERT considers the reported information to be transparent and complete.

106. The Party's 2010 national inventory report and the additional information provided during the review presented several initiatives of the Czech Republic aiming to minimize adverse impacts and detailed how it gives priority to selected actions. The latter include: the provision of support for technology and capacity development through development assistance; the reduction and phasing out of market imperfections; fiscal incentives; tax and duty exemptions; and subsidies.

III. Conclusions and recommendations

107. The ERT concludes that the NC5 generally provides a good overview of the national climate policy of the Czech Republic. The information provided in the NC5 includes most mandatory information required by the UNFCCC reporting guidance and all elements of the supplementary information under Article 7 of the Kyoto Protocol.

108. The Czech Republic's emissions for 2008 were estimated to be 27.5 per cent below its 1990 level excluding LULUCF and 28.7 per cent below including LULUCF. Emission decreases in the early 1990s were driven mainly by the transition undertaken from a centrally-planned to a market-driven economy. A decoupling of GHG emission trends from economic development since then can be observed, which was driven mainly by: a shift from solid fuels to less carbon-intensive fuels, like natural gas, nuclear power and RES; increased energy efficiency in the residential and commercial sectors; and structural changes in the agriculture sector.

109. In its NC5, the Czech Republic presents GHG emission projections for the period from 2005 to 2020 under three scenarios, namely a baseline ('without measures') scenario, a 'with measures' scenario (including the effect of currently implemented and adopted PaMs) and a 'with additional measures' scenario. The projections indicate that the Czech Republic will meet its Kyoto Protocol target (which is an 8 per cent reduction in emissions compared with the base year level during the first commitment period), even under the baseline scenario, and GHG emissions are not expected to exceed the Kyoto Protocol target even by 2020.

110. The NC5 contains sufficient information indicating that the Czech Republic is not using the mechanisms under Articles 6, 12 and 17 of the Kyoto Protocol to meet its Kyoto target for the first commitment period. Revenue generated through the sale of AAUs on the international market is channelled into GIS for the purpose of subsidizing measures promoting energy savings and the use of renewables.

111. The EU-wide common and coordinated PaMs are one of the main drivers for the Czech Republic's climate policy. This is reflected in the draft Climate Change Policy and draft State Energy Concept of the Czech Republic, the measures in which are aimed at reaching the Czech Republic's targets for GHG emission reductions, RES and energy efficiency set in the 2008 EU climate and energy package. The most prominent national

measures implemented aim to increase the use of RES and improve energy efficiency in the residential sector.

112. The ERT commends the Czech Republic for its reporting on financial resources and transfer of technology.

113. The NC5 exhibits a good balance between presenting vulnerability assessment and adaptation measures. The Czech Republic identifies the water management sector as its most vulnerable sector to climate change.

114. In its NC5, the Czech Republic has provided comprehensive information on its activities regarding education, training and public awareness, and research and systematic observation.

115. The ERT concluded that: (a) the Czech Republic's national system continues to perform its required functions as set out in decision 19/CMP.1; and (b) 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 Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol. The ERT noted that updates of databases and applications, implemented security measures and changes to the national registry software are documented regularly by nominated responsible persons.

116. 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 the Party in its 2010 annual submission is complete and transparent.

117. In the course of the IDR, the ERT formulated a number of recommendations relating to the completeness and transparency of the Czech Republic's reporting under the Convention and its Kyoto Protocol. The key recommendations[5] are that the Czech Republic:

(a) Improve the completeness of its reporting by including in its next national communication the following:

(i) A textual description of its principal PaMs by sector;

(ii) An estimate of the total effect of its PaMs, taking into account the 'with measures' and 'without measures' scenarios, by gas for 1995 and 2000;

(iii) Projections on a sectoral basis, on a gas-by-gas basis and in an aggregated format for each sector;

(iv) Separate reporting of projected emissions from international bunkers;

(b) Improve the transparency of its reporting by:

(i) Providing further information on how its national circumstances affect its GHG emissions and removals;

(ii) Providing more detailed information on its PaMs in the non-energy sectors.

118. The ERT encourages the Czech Republic to undertake a number of improvements regarding the transparency and completeness of its reporting. The most important of these are that the Party:

(a) Describe how individual ministries are involved in national climate change related policymaking and where their responsibilities lie;

[5] The recommendations are given in full in the relevant sections of this report.

(b) Clarify the status of implementation of PaMs;

(c) Provide information on the cost of PaMs;

(d) Provide a clear explanation of synergies between PaMs and GHG emissions and climate change in general;

(e) Provide more information on climate modelling and on the various approaches used for its vulnerability assessments.

IV. Questions of implementation

119. 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 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/2006/INF.2. Synthesis of reports demonstrating progress in accordance with Article 3, paragraph 2, of the Kyoto Protocol.
Available at <http://unfccc.int/resource/docs/ 2006/sbi/eng/inf02.pdf>.

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.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/CZE. Report of the individual review of the annual submission of the Czech Republic submitted in 2009.
Available at <http://unfccc.int/resource/docs/2010/arr/cze.pdf>.

FCCC/IRR/2007/CZE. Report of the review of the initial report of the Czech Republic. Available at <http://unfccc.int/resource/docs/2007/irr/cze.pdf>.

FCCC/IDR.4/CZE. Report of the centralized in-depth review of the fourth national communication of the Czech Republic.
Available at <http://unfccc.int/resource/docs/2008/idr/cze04.pdf>.

Fourth national communication and report demonstrating progress of the Czech Republic submitted in 2005. Available at <http://unfccc.int/resource/docs/natc/czenc4.pdf>.

2009 greenhouse gas inventory submission of the Czech Republic. Available at <http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/4771.php>.

2010 greenhouse gas inventory submission of the Czech Republic. Available at <http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/5270.php>.

B. Additional information provided by the Party

Responses to questions during the review were received from Ms. Katerina Konecna (Ministry of the Environment), including additional material on updated policies and measures, greenhouse gas projections, the national registry and recent climate policy

developments in the Czech Republic. The following documents were also provided by the Czech Republic:[1]

Ministry of Industry and Trade. October 2009. *Update of State Energy Concept of the Czech Republic*. Prague.

Draft Climate Change Policy - list of quantified measures including costs evaluation.

Wuppertal Institute for Climate, Environment and Energy. April 2009. *Development of Alternative Energy & Climate Scenarios for the Czech Republic*. By order of the coalition of Czech environmental NGOs lead by Friends of the Earth Czech Republic. Wuppertal.

[1] Reproduced as received from the Party.