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

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

Contents

I. Introduction and summary

A. Introduction

1. For Slovakia the Convention entered into force on 23 November 1994 and the Kyoto Protocol on 16 February 2005. Under the Kyoto Protocol, Slovakia 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 centralized in-depth review (IDR) of the fifth national communication (NC5) of Slovakia, 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 9 to 14 May 2011 in Bonn, Germany, and was conducted by the following team of nominated experts from the UNFCCC roster of experts: Mr. Jorge Alvarez Lam (Peru), Mr. Kennedy Amankwa (Ghana), Mr. Eric De Brabanter (Luxembourg), Ms. Violeta Hristova Hristova (Bulgaria), Ms. Tuğba Içmeli (Turkey), Mr. Seungdo Kim (Republic of Korea), Ms. Sara Moarif (France) and Mr. Nguyen Mong Cuong (Viet Nam). Mr. Alvarez Lam and Mr. De Brabanter were the lead reviewers. The review was coordinated by Ms. Inkar Kadyrzhanova and Ms. Barbara Muik (UNFCCC secretariat).

3. During the IDR, the expert review team (ERT) examined each section of the NC5. The ERT also evaluated the supplementary information provided by Slovakia 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 Slovakia in its 2010 annual submission and was elaborated on further in its 2011 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 Slovakia, which informed the ERT that it had no comments for incorporation into the final version of the report.

B. Summary

5. The ERT noted that Slovakia'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. Slovakia considered most of the recommendations provided in the IDR report on the fourth national communication (NC4) of Slovakia.[3] The ERT commended Slovakia for its improved reporting.

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, Slovakia provided further relevant information.

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

[2] **Decision 15/CMP.1, annex, chapter II**.

[3] FCCC/**IDR**.4/SVK.

1. Completeness

7. The NC5 covers most of the sections required by the UNFCCC reporting guidelines, except for the executive summary, and most of the supplementary information under Article 7, paragraph 2, of the Kyoto Protocol, except for information on domestic and regional programmes and/or legislative arrangements and enforcement and administrative procedures, established pursuant to the implementation of the Kyoto Protocol (see para. 33 below). The NC5 does not include some information required by the UNFCCC reporting guidelines, such as information on national circumstances (see para. 11 below), policies and measures (PaMs) (see paras. 26 and 29 below), vulnerability and adaptation (see para. 78 below) and research and systematic observation (see para. 87 below). This missing information was provided by Slovakia during the review. The ERT recommends that Slovakia enhance the completeness of its reporting by including this missing information in its next national communication.

2. Transparency

8. The ERT acknowledged that Slovakia's NC5, including supplementary information provided under Article 7, paragraph 2, of the Kyoto Protocol, is generally comprehensive and transparent. The NC5 provides information on most aspects of implementation of the Convention and its Kyoto Protocol, which is generally transparent. The ERT noted that the NC5 is structured following the outline contained in the annex to the UNFCCC reporting guidelines and the 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 Slovakia to further increase the transparency of its reporting with regard to national circumstances (see para. 11 below), PaMs (see paras. 28 and 54 below) and projections and the total effect of PaMs (see paras 57, 63 and 72 below).

3. Timeliness

9. The NC5 was submitted on 15 February 2010, after the deadline of 1 January 2010 mandated by decision 10/CP.13. Slovakia informed the secretariat about its difficulties with the timeliness of its national communication submission on 22 December 2009 in accordance with decision 22/CMP.1, paragraph 139. The ERT noted with concern the delay in the submission of the NC5. The ERT recommends that Slovakia submit its next national communication on time.

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, Slovakia has provided a concise description of the national circumstances, and has elaborated on its framework legislations and key policy documents on climate change. The NC5 also referred to the description of a national system provided in its initial report mandated by decision 13/CMP.1, submitted in 2006.[4] Further technical assessment of the institutional and legislative arrangements for coordination and implementation of PaMs is provided in chapter II.B.I of this report.

[4] Report of the review of the initial report of Slovakia. Available at <http://unfccc.int/national_reports/initial_reports_under_the_kyoto_protocol/items/3765.php>.

1. National circumstances

11. In its NC5, Slovakia has provided a description of its national circumstances and information on Government structure, population, climate, economy and relevant economic sectors. However, the ERT noted that Slovakia did not provide the following reporting elements required by the UNFCCC reporting guidelines: how these national circumstances affect GHG emissions and removals in Slovakia, and how changes in national circumstances affect GHG emissions and removals over time. The ERT recommends that Slovakia include, in its next national communication, more detailed information on these missing reporting elements.

12. As an economy in transition from a centrally planned to a market driven economy, Slovakia experienced a reduction in gross domestic product (GDP) and significant slowdown of economic activities at the beginning of the 1990s. During the period 1995–2008, the negative economic trend reversed and the macroeconomic indicators, such as GDP and GDP per capita, demonstrated significant growth. Slovakia's economy provides an example of transition towards the low carbon economy that is characterised by high economic growth (GDP increase by 74.5 per cent) and significant reduction of carbon intensity (decrease of GHG emissions per unit of GDP by 62.8 per cent) over the period 1990–2008 (see para. 17 below). Table 1 illustrates the national circumstances of the country by providing some indicators relevant to GHG emissions and removals.

13. Slovakia is a parliamentary democracy headed by the President. The overall responsibility for climate change policymaking lies with the Ministry of Environment (MZP) of Slovakia. Implementation of the Kyoto Protocol is underpinned by Slovakia's policies and regulations adopted in the course of the harmonization of the national legislation with the 2008 European Union (EU) Climate and Energy Package (CEP) (see para. 34 below). Further legislative arrangements and administrative procedures, including those for the national system and the national registry are presented in chapters II.A.2, II.A.3 and II.B of this report.

14. Slovakia has provided a summary of information on GHG emission trends for the period 1990–2007. This information is broadly consistent with the 2009 national GHG inventory submission. Summary tables, including trend tables for emissions in carbon dioxide equivalent (CO_2 eq) (given in the common reporting format), are also provided in an annex to the NC5. During the review, the ERT assessed Slovakia's recently submitted 2011 national GHG inventory submission and reflected its findings in this report.

15. Total GHG emissions[5] excluding emissions and removals from land use, land-use change and forestry (LULUCF) decreased by 41.4 per cent between 1990 and 2009, whereas total GHG emissions including net emissions or removals from LULUCF decreased by 43.9 per cent. This was mainly attributed to CO_2 emissions, which decreased by 44.1 per cent over this period. Emissions of methane (CH_4) decreased also by 9.6 per cent, while emissions of nitrous oxide (N_2O) decreased by 42.1 per cent. A major part of these decreases was experienced during the period 1990–1995: CO_2 emissions decreased by 28.2 per cent, CH_4 by 11.2 per cent, N_2O by 35.2 per cent and total GHG emissions by 28.1 per cent. Emissions of fluorinated gases (F-gases) accounted for about 0.4 per cent of the total GHG emissions in 1990 and 0.8 per cent of those in 2009.

[5] In this report, the term "total GHG emissions" refers to the aggregated national GHG emissions expressed in terms of CO_2 eq excluding LULUCF, unless otherwise specified.

Table 1
Indicators relevant to greenhouse gas emissions and removals for Slovakia

	1990	*1995*	*2000*	*2005*	*2008*	*Change 1990–2000 (%)*	*Change 2000–2008 (%)*	*Change 1990–2008 (%)*
Population (million)	5.30	5.36	5.40	5.39	5.41	1.9	0.2	2.1
GDP (USD 2 000 billion using PPP)	54.97	50.17	59.26	75.29	95.91	7.8	61.8	74.5
TPES (Mtoe)	21.34	17.77	17.74	18.84	18.32	–16.9	3.3	–14.1
GDP per capita (USD 2 000 thousand using PPP)	10.37	9.36	10.97	13.97	17.73	5.8	61.5	70.9
TPES per capita (toe)	4.03	3.31	3.29	3.50	3.39	–18.4	3.1	–15.9
GHG emissions without LULUCF (Tg CO_2 eq)	74.15	53.35	49.24	50.11	48.19	–33.6	–2.1	–35.0
GHG emissions with LULUCF (Tg CO_2 eq)	71.20	50.00	46.16	48.68	45.01	–35.2	–2.5	–36.8
CO_2 emissions per capita (Mg)	11.84	8.37	7.63	7.70	7.23	–35.6	–5.2	–39.0
CO_2 emissions per GDP unit (kg per USD 2 000 using PPP)	1.14	0.89	0.69	0.55	0.41	–39.1	–41.3	–64.3
GHG emissions per capita (Mg CO_2 eq)	13.99	9.95	9.12	9.30	8.91	–34.8	–2.3	–36.3
GHG emissions per GDP unit (kg CO_2 eq per USD 2 000 using PPP)	1.35	1.06	0.83	0.67	0.50	–38.4	–39.5	–62.8

Sources: (1) GHG emissions data: Slovakia's 2011 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. Trends of total GHG emissions were mostly underpinned by the trend of CO_2 emissions from the energy sector, where CO_2 emissions dropped by 49.1 per cent during the period 1990–2009. Significant emission decrease has been observed mainly during the 1990s driven by the decrease in industrial output and structural changes in Slovakia's economy and industry, caused by the transition from a centrally planned to a market driven economy, as well as by changes in composition of primary energy use, reduction of the share of solid fuels in total energy mix, improvements in energy efficiency in energy industries and increase of the share of the services sector in GDP. In addition to the energy sector, the emissions from the agriculture sector dropped significantly, by 57.3 per cent, during the period 1990–2009, due to restricted use of fertilizers, reduction of livestock population, in particular cattle, new procedures in cattle stabling and animal waste management.

17. The emission trend during the 1990s declined significantly driven by the collapse of economic activity, while the emission trend of the 2000s demonstrated an absolute decoupling of emissions and economic growth, as carbon intensity was declining faster than GDP was growing. 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 2009.

Table 2
Greenhouse gas emissions by sector in Slovakia, 1990–2009

	GHG emissions (Tg CO_2 eq)						*Change (%)*		*Shares[a] by sector (%)*	
Sector	*1990*	*1995*	*2000*	*2005*	*2008*	*2009*	*1990–2009*	*2008–2009*	*1990*	*2009*
1. Energy	55.32	38.42	34.05	33.16	31.32	28.69	–48.1	–8.4	74.6	66.1
A1. Energy industries	16.18	11.98	12.28	11.89	10.84	9.85	–39.1	–9.2	21.8	22.7
A2. Manufacturing industries and construction	19.81	12.35	8.52	7.37	7.07	6.34	–64.3	–10.2	26.7	14.6
A3. Transport	5.04	4.38	4.21	6.27	6.71	6.21	23.2	–7.5	6.8	14.3
A4.–A5. Other	13.22	8.47	7.72	6.62	5.64	5.15	–61.1	–8.7	17.8	11.9
B. Fugitive emissions	1.08	1.24	1.32	1.01	1.07	1.15	5.9	7.5	1.5	2.6
2. Industrial processes	10.53	9.30	9.88	11.23	11.18	9.39	–10.8	–16.0	14.2	21.6
3. Solvent and other product use	0.15	0.12	0.09	0.17	0.17	0.16	11.7	–1.3	0.2	0.4
4. Agriculture	7.06	4.28	3.44	3.21	3.15	3.02	–57.3	–4.2	9.5	7.0
5. LULUCF	–2.95	–3.35	–3.07	–1.43	–3.18	–3.45	16.7	8.6	–4.0	–7.9
6. Waste	1.09	1.23	1.77	2.34	2.37	2.16	97.9	–8.7	1.5	5.0
7. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GHG total with LULUCF	**71.20**	**50.00**	**46.16**	**48.68**	**45.01**	**39.98**	**–43.9**	**–11.2**	**NA**	**NA**
GHG total without LULUCF	**74.15**	**53.35**	**49.24**	**50.11**	**48.19**	**43.43**	**–41.4**	**–9.9**	**100.0**	**100.0**

Source: GHG emissions data: Slovakia's 2011 GHG inventory submission.

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

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

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

2. National system

18. In accordance with decision 15/CMP.1, Slovakia 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 Party also provided a reference to the 2009 annual submission, which contains a more detailed description of the national system. The description includes all of the elements as required in decision 15/CMP.1.

19. Slovakia provided a description of national legislative arrangements and administrative procedures that seek to ensure that the implementation of activities under Article 3, paragraph 3, of the Kyoto Protocol and elected activities under Article 3, paragraph 4, of the Kyoto Protocol (KP-LULUCF) also contribute to the conservation of biodiversity and the sustainable use of natural resources. Slovakia explained during the review that its national system includes the institutional and legal arrangements necessary for reporting on the KP-LULUCF that are managed by the National Forest Centre under the Ministry of Agriculture and Rural Development.

20. The ERT took note of the recommendations of the report of the individual review of the 2010 national GHG inventory submission (2010 ARR). The ERT concluded that Slovakia's national system continued to perform its required functions as set out in decision 19/CMP.1.

3. National registry

21. In its NC5, Slovakia has provided information on the national registry, including 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 standard for data exchange between registry systems.

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

23. The ERT took note of the conclusion of the standard independent assessment report that Slovakia should describe the change in the national registry related to the software update clearly and state if a change to the national registry resulted in a change to any aspect covered in paragraphs 32(b)–(j) to the annex of decision 15/CMP.1; provide project information on the public user interface of its national registry; and make the permissible transaction information referred to in paragraph 47 to the annex of decision 13/CMP.1 publicly available, based on the results of the confidentiality evaluation. The ERT also took note of the recommendation of the 2010 ARR. The ERT noted that Slovakia has not changed its national registry system since the 2010 annual submission.

24. The ERT concluded that Slovakia'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, Slovakia has provided, in its NC5, comprehensive information on its package of PaMs implemented, adopted and planned in order to fulfil its commitments under the Convention and its Kyoto Protocol. Each sector has its own textual description of the principal PaMs, including their implementation status, implementing entity and GHG affected. The NC5 includes a similar set of PaMs to those in the NC4, but the NC5 contains more detailed descriptions of PaMs as well as information on a larger number of reported PaMs.

26. However, the ERT noted that Slovakia did not provide the following reporting elements required by the UNFCCC reporting guidelines: summary tables on PaMs by sector; PaMs subdivided by GHG; and information on how Slovakia believes that its PaMs are modifying longer-term trends in anthropogenic GHG emissions and removals, consistent with the objective of the Convention. During the review, Slovakia provided the missing information. The ERT recommends that Slovakia include this missing information

in its next national communication. The ERT further recommends that, in its next national communication, Slovakia improve the transparency of its reporting on PaMs by providing more detailed information on the description of certain key PaMs in terms of their objectives, activities and implementation status. The ERT encourages Slovakia to report more transparently on linkages and overlaps between various PaMs.

27. In its NC5, Slovakia provided comprehensive information on PaMs at the national level. The key climate and energy policy framework is the EU CEP, adopted in 2008, that sets out the EU commitments to meet the quantified emission reduction targets by 2020: 20 per cent emission reduction below the 1990 levels, promotion of renewable energy sources (RES) by increasing the share to 20 per cent in gross final energy consumption and promotion of energy efficiency by reaching 20 per cent energy savings. The EU emissions trading scheme (EU ETS), enhanced by the CEP provisions, is Slovakia's principal cross-sectoral policy (see para. 34 below). The ERT encourages Slovakia, in its next national communication, to highlight its most effective and innovative PaMs.

28. The NC5 contained estimates of the mitigation effects of seven PaMs in the energy, industry, agriculture and waste sectors for the years 2010, 2015 and 2020. During the review, Slovakia explained to the ERT that only these PaMs were considered to have significant and technically determinable emission reduction potentials, and that their effects were determined using modelling and projections. Slovakia also reported a list of 15 PaMs and indicated which of them interact with each other, however, the linkages between this list, the descriptions of individual PaMs and the emission projections were not sufficiently transparent (see para. 57 below).

29. Slovakia did not provide a description of how the effects of PaMs are monitored over time and by which organization. During the review, Slovakia provided additional information explaining that the monitoring and evaluation of implementation and impacts of PaMs are primarily ensured by the Slovak Hydrometeorological Institute, the MZP and representatives from other ministries, as necessary. The ERT encourages Slovakia to include more complete information on the approach to monitor and evaluate progress with the implementation of PaMs over time in its next national communication.

30. Slovakia has not reported on PaMs that could potentially increase GHG emissions. The ERT encourages Slovakia to review and report on such PaMs in its next national communication, if applicable. Slovakia reported that one previously reported PaM on the regulation of electricity and gas networks was no longer in place, however no reason was provided for its discontinuation. During the review, Slovakia informed the ERT that this PaM had been amended and superseded by other PaMs. In its NC5, the majority of reported PaMs are regulatory policies; and only one economic PaM was reported, that is a governmental programme aimed at providing low-interest loans to finance improved energy efficiency through the installation of thermal insulation during building renovation (see para. 42 below). Table 3 provides a summary of the reported information on the PaMs of Slovakia.

Table 3
Summary of information on policies and measures

Major policies and measures	*Examples/comments*
Policy framework and cross-sectoral measures	
EU Climate and Energy Package	Sets the 2020 EU targets on 20 per cent emission reduction below the 1990 level; 20 per cent share of RES in gross final energy consumption; 20 per cent increase in energy efficiency (1,585 Gg CO_2 eq and 2,643 Gg CO_2 eq)
Act on emission trading (572/2004,	Transposes the EU directive on EU ETS (2003/87/EC) (983 Gg CO_2 eq and 1,802 Gg CO_2

Major policies and measures	*Examples/comments*
117/2007)	eq)
EU effort sharing agreement on emission reductions from non-ETS sectors	Sets a target for the non-ETS sectors for the period 2013–2020 is to limit the growth of total GHG emissions to 13 per cent by 2020 above the 2005 level
Energy	
Act on network industries (107/2007); Act on energy (112/2008)	Establishes energy sector regulations and promotes liberalization; and regulates an entry into the electricity and gas markets
Energy efficiency concept (2006)	Sets a quantified target of achieving average annual savings in final energy consumption of 4,135 TJ from 2008 to 2016
Act on efficiency in energy use (476/2008), Act on energy efficiency of buildings (555/2005)	Regulates energy efficiency in buildings, implementation of the EU directive on the energy performance of buildings (2002/91/EC); national programme on the thermal insulation of buildings (379/2009) (38 Gg CO_2 eq and 38 Gg CO_2 eq)
Strategy for further utilization of RES (2004)	Establishes targets of a 4 per cent share of RES in total energy consumption by 2010 and 7 per cent share by 2015
Transport	
Regulation on biofuels produced from RES (246/2006)	Defines a minimum use of biofuels and refers to the EU directive on promotion of the use of biofuels in transport (2003/30/EC), which set the target of reaching 10 per cent share of biofuels in transport; supports implementation of the National Development Programme for Biofuels for 2006–2010 (262 Gg CO_2 eq and 631 Gg CO_2 eq)
EU directive on inclusion of aviation in the EU ETS (2008/101/EC)	Regulates inclusion of aviation in the EU ETS; sets the monitoring requirements for operators as of 2010; and will allocate the allowances to the aircraft operators as of 2012
Industrial processes	
EU regulation on F-gases (842/2006/EC)	Defines measures to prevent and reduce emissions of F-gases and regulates labeling and disposal of products and equipment containing these gases (2 Gg CO_2 eq and 117 Gg CO_2 eq)
Regulation on technical conditions to reduce emissions from air-conditioning systems (655/2007)	Regulates the use of emissions from air conditioning systems in motor vehicles, introduces the ban on the use of F-gases with high global warming potential by 2017; transposes the EU directive on emissions from air-conditioning systems in motor vehicles (2006/40/EC)
Agriculture	
Council directive on protection of waters from pollution caused by nitrates from agricultural sources (91/676/EEC)	Introduces limitation on pollution of water by nitrates (412 Gg CO_2 eq and 427 Gg CO_2 eq)
EU Common Agricultural Policy	Provides data on CH_4 emissions, GHG emissions from agricultural activities; implementation of improved manure handling; and impacts of subsidies assessed
Forestry	
Rural development programme for 2007–2013	Sets targets for afforestation of 23,000 ha of agricultural lands by 2020 and converting of 50,000 ha of arable soil into grasslands by 2015
Forest act (360/2007)	Establishes a framework for forest soil conservation and forest management and defines sustainable felling rates based on carbon sequestration levels and on the demand for wood
Waste	
EU directive on waste (2006/12/EC)	Regulates waste management, covering collection, transport, treatment, storage, recovery and disposal of waste (262 Gg CO_2 eq and 631 Gg CO_2 eq)

Note: The greenhouse gas reduction estimates, given for some measures (in parentheses), are reductions in CO_2 eq for the years 2010 and 2020.

Abbreviations: EU = European Union; EU ETS = European Union emissions trading scheme; F-gases = fluorinated gases; GHG = greenhouse gas; RES = renewable energy sources.

1. Policy framework and cross-sectoral measures

31. The Department for Climate Change Policy and Economic Instruments at the MZP is responsible for environmental policy, climate change mitigation measures and co-ordination of climate-related activities with other ministries. The cross-sectoral expert group, established in 2005, was responsible, as of 2007, for the preparation of the national allocation plans under the EU ETS. The Commission on the CEP, established in August 2008, coordinates activities and strategies to implement the CEP, including the international commitments related to climate change mitigation and adaptation. The Commission comprises the state secretaries of all the relevant ministries and has a technical expert group designated as its working body.

32. In its NC5, Slovakia did not report on the role of local governments, but during the review, it informed the ERT that they play an important role in the implementation of mitigation and adaptation measures, although these are not systematically aligned with the measures implemented by the MZP. However, the central and local governments work closely together in the context of programmes financed by the EU structural funds, specifically the Operational Programme Environment.

33. The legal basis for implementation of the Convention is resolution 272, adopted on 20 April 1993, vesting the Minister of Environment and the Minister of Finance with the authority to implement Slovakia's commitments as stipulated in the Convention. The Kyoto Protocol was adopted under the national law on 16 February 2005 issued by the Ministry of Foreign Affairs. In its NC5, Slovakia has not reported on any other regional programmes, legislative arrangements and enforcement and administrative procedures, established pursuant to the implementation of the Kyoto Protocol, including the legal authority established for such programmes and procedures for addressing cases of non-compliance. The ERT recommends that Slovakia include, in its next national communication, relevant information on this reporting element.

34. The key medium- and long-term programmes are linked to the EU 2020 targets stipulated in the CEP[6]. Slovakia has transposed into national law the EU directives and their amendments, such as the directive establishing the EU ETS, and the EU decision concerning a mechanism for monitoring Community's GHG emissions and for implementing the Kyoto Protocol. Slovakia's installations that are covered by the EU ETS will be subject to increasingly stringent caps, in line with the EU target of reducing emissions from the installations taking part in the EU ETS by 21 per cent by 2020 compared with the 2005 level.

35. As part of the EU effort-sharing decision, Slovakia must also limit the growth of GHG emissions from its non-ETS sectors (such as buildings, transport, waste and agriculture) to 13 per cent above the 2005 levels by 2020. As part of the EU CEP, Slovakia committed to increase the share of RES to 14 per cent of the country's gross final energy consumption by 2020. In addition, Slovakia introduced the target of 9 per cent reduction in energy consumption between 2008 and 2016, i.e. 37,215 TJ (see para. 40 below).

2. Policies and measures in the energy sector

36. The energy sector in Slovakia accounted for 66.1 per cent of total GHG emissions in 2009. In the same year, most emissions from fossil fuel combustion came from energy industries (35.7 per cent); manufacturing industries and construction (22.1 per cent); transport (21.7 per cent); and other sectors (residential and commercial sectors) made up for

[6] The EU climate and energy package was adopted to deliver a 20 per cent reduction in total EU emissions by 2020 relative to the 1990 level. The total effect of emission reduction has been divided between the EU ETS and non-ETS sectors.

the rest. Between 1990 and 2009, GHG emissions from the energy sector decreased by 48.1 per cent (26.63 Tg CO_2 eq), driven mainly by such key drivers as structural changes in Slovakia's economy, switching away from the use of coal as a fuel and the adoption of legislation on regulation of air pollution. During the period 1990–2009, the most significant emission decrease occurred in manufacturing (64.3 per cent or 13.46 Tg CO_2 eq) and in the sector 'other' (61.1 per cent or 8.07 Tg CO_2 eq), driven by the same key drivers as above, but also by improved energy efficiency in buildings, appliances and equipment.

37. ***Energy supply.*** Slovakia imports 90 per cent of its energy resources and produces only 10 per cent domestically, including 6 per cent from brown coal, 3 per cent from hydropower and 1 per cent from domestic gas and oil. Final energy consumption is dominated by fossil fuels. Final consumption of coal has declined significantly, by 47 per cent, between 2000 and 2007, while that of liquid fuels and electricity has increased, by 44 per cent and 282 per cent respectively, for the same period. In 2010, RES comprised approximately 10 per cent of the total final energy consumption; however, without large hydropower sources this share drops to approximately 5 per cent. While Slovakia's energy intensity, measured by final energy consumption per unit of GDP, has declined significantly since 1990, it remains 1.9 times higher than the EU average.

38. ***Renewable energy sources.*** In its NC5, Slovakia has reported several regulatory measures and strategic targets for promotion of RES use in transport and for electricity production. Slovakia reported on its 2004 strategy for the further utilization of RES, which set the targets for 2010 (4 per cent) and 2015 (7 per cent) for the share of RES in the gross final energy consumption. During the review, Slovakia indicated to the ERT that this target was exceeded in 2010, with RES constituting approximately 10 per cent of the country's gross final energy consumption. Since the submission of its NC5, Slovakia has adopted the National Renewable Energy Action Plan with the aim to increase the share of RES to 14 per cent of the country's gross final energy consumption by 2020.

39. Since 2009, Slovakia has revised its regulations that provide renewable energy producers with a guaranteed feed-in tariff for electricity generation, redefined a preferential access to grid and mandated electricity facilities with the capacity of over 50 MW to use RES for 20 per cent of their capacity. Slovakia is also aiming to increase the share of biomass in its gross final energy consumption and has adopted the Biomass Utilization Action Plan to this effect.

40. ***Energy efficiency.*** Two policy framework documents, the Energy Security Concept (2007) and the Energy Efficiency Action Plan (2007), impact Slovakia's energy efficiency policy. The first document establishes targets for ensuring energy supply security for Slovakia by 2020, and the second one establishes a target to reduce energy consumption by 9 per cent between 2008 and 2016, in three year periods. For the period 2008–2010, a reduction target was set at 3 per cent. As Slovakia informed the ERT during the review, this target had been significantly exceeded. During the review, Slovakia informed the ERT that for the period 2011–2013 the Second Energy Efficiency Action Plan sets the target of 2.7 per cent reduction and focuses on energy efficiency measures in the public sector and sectors with the greatest energy saving potential, such as industry, transport and buildings.

41. To achieve its energy efficiency targets, Slovakia has implemented a range of measures, notably in the buildings sector, combining more stringent building codes, informational tools, such as building energy certificates, and financial support schemes for building renovations. Measures supporting energy efficiency in industry are also in place (see para. 46 below).

42. ***Residential and commercial sectors.*** Implementation of regulations that are in line with the EU directives, such as on the energy performance of buildings, energy services, eco-design and energy labelling, has led to the adoption of the regulations on building

renovation, energy certificates, performance standards and labels for appliances and equipment. Slovakia also uses funding from the EU and the European bank of reconstruction and development to finance thermal insulation of buildings (since 1996 and 2004) as well as building renovation (since 2007). In 2009, Slovakia implemented a programme on thermal insulation of buildings, providing 346 residential homes and buildings with the preferential 15-year loans for building renovation that result in a minimum of 20 per cent of energy savings. The programme will continue until 2013 with an annual budget of EUR 10 million.

43. ***Transport sector.*** The emissions from the transport sector increased by 23.3 per cent or 1.17 Tg CO_2 eq between 1990 and 2009. The transport sector contributes 14.3 per cent of total GHG emissions in 2009, compared with only 6.8 per cent in 1990. Between 1990 and 2007, the numbers of registered passenger cars, light- and heavy-duty vehicles increased by 63.8 per cent, 356.2 per cent and 143.3 per cent, respectively. During the period 2004–2008, the use of public transport and railways decreased, while the use of personal and cargo road transport, and air transport increased.

44. In its NC5, Slovakia has reported that the Government supports such measures, as development and modernization of public transport system; information dissemination on fuel consumption and CO_2 emissions at sale and leasing of passenger cars; and collection and disposal of end-of-life vehicles. As of 2004, all new passenger vehicles must have labels containing information on fuel consumption and CO_2 emissions. Slovakia adopted in 2005 the Concept on Higher Use of Biofuels in Transport and the National Development Programme on Biofuels that established the target of reaching the share of 3.7 per cent of biofuels in total quantity of gasoline and diesel oil in 2010 and 10 per cent in 2020. According to the NC5, the share of biofuels was 4.3 per cent in 2007.

45. Slovakia also prepares for inclusion of the aviation sector in the EU ETS from 2012 onwards. As of 2010, aircraft operators must monitor tonne–kilometres on the basis of a monitoring plan approved by the MZP. In addition, Slovakia implements the International Civil Aviation Organization rules, which, as it believes, are leading to an improvement in monitoring, reporting and evaluation of operation of the aviation sector.

46. ***Industrial sector.*** Slovakia has reported on the framework of the EU Operational Programme Industry and Services that set the quantified targets for the period 2004–2006 regarding certain GHG emissions, energy intensity and energy costs, and provided support to finance projects on renewable energy and energy efficiency. The programme was implemented until 2008 and achieved most of its targets, such as reduction of energy intensity of the industries in 2008 by 7.2 per cent below the 2001 levels, which is beyond the initial target of 2.5 per cent reduction by 2006. During the review, Slovakia informed the ERT about a new EU operational programme, called Competitiveness and Economic Growth, that provides funding for the industrial energy saving programmes and requires mandatory energy audits to be undertaken by 2013; as the result of this programme Slovakia expects to reach further energy savings.

3. Policies and measures in other sectors

47. Between 1990 and 2009, GHG emissions from non-energy sectors (industrial processes, including solvent and other product use, agriculture and waste) decreased by approximately 21.7 per cent. Emissions from the industrial processes sector decreased by 10.8 per cent (1.14 Tg CO_2 eq) over the same period and demonstrated a significant drop (16 per cent) between 2008 and 2009 that was caused by the economic crisis. During the period 1990–2009, the greatest decrease in emissions occurred in the agriculture sector, 57.3 per cent (4.05 Tg CO_2 eq), driven by a reduction in livestock numbers and a decrease in the use of mineral fertilizers. The largest increase in emissions since 1990 has occurred

in the waste sector, by 97.9 per cent (1.07 Gg CO_2 eq), due to an increase in CH_4 emissions from solid waste disposal on land.

48. ***Industrial processes.*** Slovakia has implemented several measures since 2005, including legislation for a ban (to come into effect as of January 2017) on the use of F-gases with a global warming potential (GWP) higher than 150 in all mobile air-conditioning systems. Slovakia also implements the EU regulation on labelling and disposal of F-gases. A detailed database on reporting requirements and obligations of persons and entities handling F-gases has been put in place since 2009.

49. ***Agriculture.*** Since 2003, Slovakia has implemented the EU Common Agricultural Policy, requiring the following: monitoring of CH_4 emissions from cattle, agricultural activities and associated GHG emissions; determination of CO_2 reductions associated with energy intensity; and quantification of the impacts of biomass subsidies on agricultural crops. Slovakia has reported in the NC5 on the Concept of Agricultural Policy for 2004–2006 and its new document for 2007–2013. The principal measure reported and quantified in the NC5 is a regulation limiting the use of nitrogen fertilizers in agricultural soils.

50. ***LULUCF.*** According to its 2011 annual submission, the LULUCF sector was a net removal of 3.45 Tg CO_2 in Slovakia in 2009, and net GHG removals increased by 16.7 per cent since 1990. Slovakia reported in its NC5 that since 2000 the area of commercial forests has increased by 1.9 per cent, while the area of protected forests has stabilized and wood supply in forests has increased.

51. Slovakia adopted the Action Plan of the National Forest Programme for 2007–2013 that includes measures to improve forest monitoring and protection as well as adaptation to climate change. Slovakia amended its legislation in 2007, creating a framework for sustainable wood felling and forest soil conservation. In the section on projections in the NC5, Slovakia has reported on its Rural Development Programme for 2007–2013, containing targets for afforestation by 2015 and by 2020.

52. ***Waste management***. In its NC5, Slovakia has listed six PaMs that have been in place since its NC4, such as PaMs that target waste disposal on landfills, wastewater treatment and waste re-use and recycling. Since 2006, Slovakia has implemented EU directive on waste requiring that measures be taken to reduce or prevent waste production, including improved disposal, separation, recycling, recovery and use of waste. Slovakia does not expect an increase in the number of waste incineration plants in the future.

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

53. In its NC5, Slovakia has reported 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, environmental and economic impacts, on other Parties, especially developing country Parties, particularly those identified in Article 4, paragraphs 8 and 9, of the Convention. The ERT noted that the same information has been reported on how Slovakia 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, in its 2011 annual submission, presented in chapter II.I of this report.

54. In its NC5, Slovakia has provided a brief analysis of a set of PaMs with potential effects on other Parties (coal industry subsidies, biofuel use and carbon leakage) and has indicated that its PaMs are unlikely to have adverse economic effects on international trade or other Parties given its small open economy. Slovakia explained during the review that it did not import biofuels from developing countries, and it has fully implemented the EU sustainability criteria for biofuels. The ERT recommends that Slovakia continue reporting

more complete and transparent information on its PaMs and their potential adverse effects, including the effects of climate change, effects on international trade and social, environmental and economic impacts on other Parties, especially developing country Parties, and report this information in its next national communication.

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

55. In its NC5, Slovakia has reported its projections on a sectoral and gas-by-gas basis, under three scenarios, namely 'without measures', 'with measures' and 'with additional measures'. During the review, the ERT was informed that the updated projections were published in March 2011 in the Biennial report to the European Commission[7] (hereinafter, biennial report). These updated projections were considered by the ERT in conjunction with the review of the projections reported in the NC5.

1. Projections overview, methodology and key assumptions

56. In its NC5, Slovakia has provided sufficiently detailed information on GHG emission projections. It has reported the projections under the 'without measures', 'with measures' and 'with additional measures' scenarios until 2020, presented relative to actual inventory data until 2007 with a reference year of 2006. Projections are presented on both a sectoral and a gas-by-gas basis for all gases, namely CO_2, CH_4, N_2O, perfluorocarbons, hydrofluorocarbons and sulphur hexafluoride. Projections are fully compatible with the Party's GHG inventory. Projections are also provided in an aggregated format for each sector as well as for a national total, using GWP values. In the NC5, following a recommendation made in the previous review report, emission projections related to fuel sold to ships and aircraft engaged in international transport were reported separately and not included in the totals. During the review, Slovakia provided the updated projections until 2030, based on actual inventory data until 2008, which is used as a reference year.

57. The ERT noted that in the NC5 in most of the sectors, except for agriculture and industrial processes, the sectoral categories used in the section on projections are not fully consistent with those used in the section on PaMs, which it not in line with the UNFCCC reporting guidelines. Moreover, the projections of carbon removals in LULUCF are not consistently reported in the 'without measures' and 'with measures' scenarios. The ERT therefore encourages the Party to use the sectoral categories and subcategories presented in the sections on PaMs and on projections consistently in order to increase the transparency of its reporting in its next national communication.

58. In the NC5, the 'with measures' scenario encompassed all implemented and adopted PaMs after 2006. The 'with additional measures' scenario included the same implemented and adopted PaMs after 2006 and the planned PaMs at the time of reporting. Finally, the 'without measures' scenario comprised all implemented and adopted PaMs until 2006.

59. The updated projections are much more in line with the UNFCCC reporting guidelines. The 'with measures' scenario includes the implemented and adopted PaMs after 31 December 2000 and before March 2011, and the 'with additional measures' scenario includes the same implemented and adopted PaMs after 31 December 2000 and the planned PaMs as of March 2011. The 'without measures' scenario excludes the PaMs implemented and adopted after 31 December 2000 and any planned PaMs. The ERT therefore recommends that the Party continue reporting the projections in the same manner as

[7] Biennial report of the Slovak Republic pursuant to Article 3(2) of Decision No 280/2004/EC concerning a mechanism for monitoring Community greenhouse gas emissions and for implementing the Kyoto Protocol, 2001.

reported in the biennial report in its next national communication, while improving the description of the projection scenarios.

60. Information on the methodologies used for each sector, key underlying assumptions and results of the projections have been reported in a clear and transparent manner in the NC5. The diagrams illustrating the results of the projections have been provided. For the projections of emissions from fossil fuel combustion and transformation, excluding road transportation, Slovakia used the model designed for assessing energy supply strategy alternatives and their general environmental impacts (MESSAGE) developed by the International Institute for Applied Systems Analysis. For the transport sector, the COPERT 4 model, which is a software tool used world-wide to calculate emissions of air pollutants and GHGs from road transport, has been used; the results of modelling have been complemented by expert judgment. The main difference between the projections reported in the NC5 and in the biennial report relates to energy consumption in the different sectors; in the NC5 it is based on reported national assumptions, whereas in the biennial report it is based on the results of the European PRIMES model, which is a model that simulates a market equilibrium for energy supply and demand in the EU member States.

61. Projections for the non-energy sectors follow the methods used in the inventory and are based mostly on expert judgment. Projections for the LULUCF sector were based on expert judgment, which was reinforced by expected developments outlined in the sectoral strategy documents on rural development.

62. A number of assumptions based on the sector-specific projections of background and activity data submitted by relevant national institutions or companies have been incorporated in the MESSAGE model, such as macro-economic indicators (GDP and value added), final energy consumption, electricity production, heating and hot water consumption by type of dwelling and by heating system. The prices of carbon allowances and of fuel, cost of investment in equipment and use of fuels were also included in the MESSAGE model. However, the ERT noted that Slovakia has not reported on the assumptions related to the prices and costs used in the models and projections. To the extent that these variables play a role in the projection calculations, the ERT encourages Slovakia, in its next national communication, to report and provide an analysis of the impact of price and cost assumptions.

63. The ERT recommends that Slovakia, in its next national communication, increase the transparency of its reporting with regard to the methodology used for projections as well as assumptions related to the background and activity data, mainly in the non-energy sectors, by preparing a summary or overview table, as has been already recommended in the previous review report. The ERT also encourages Slovakia, in its next national communication, to provide information on the strengths and weaknesses of the modelling framework as well as on the changes, if any, in the methodology used.

64. A sensitivity analysis to estimate the impact of key drivers and PaMs on emission levels was conducted for key sectors and was reported on in the NC5. This analysis estimated the impacts of economic growth by using various assumptions relating to sectoral value added in key sectors of the economy as well as assumptions relating to various shares of RES in the final energy consumption compared to the 2006 level. The analysis showed that further sizeable reductions in CO_2 emissions (between 2 and 8 per cent) could be achieved by 2020 by setting different shares of RES in a range from 8 per cent to 23 per cent of the final energy consumption. This analysis based on the shares of RES has been updated in the biennial report by including the information on prices for biomass and costs of boilers. Nevertheless, the description and discussion of the sensitivity analysis results did not appear straightforward to the ERT. Therefore, the ERT encourages Slovakia to improve the transparency of reporting on sensitivity analysis in its next national communication.

2. Results of projections

65. According to the NC5, under all three reported scenarios Slovakia will meet its Kyoto Protocol target for the first commitment period without using the Kyoto Protocol mechanisms and without using accounting for KP-LULUCF activities. This is the case even under the 'without measures' scenario. The Kyoto Protocol target for the first commitment period for Slovakia is to reduce its level of total GHG emissions by 8 per cent below the base year level; this is equal to the level of 66.29 Tg CO_2 eq on average per year during the period 2008–2012.

66. According to the NC5, total GHG emissions in 2010 are expected to be 26.9 per cent, 29.2 per cent and 30.7 per cent below the base year level, under the 'without measures', 'with measures' and 'with additional measures' scenarios, respectively; whereas according to the updated projections, total GHG emissions in 2010 are expected to be 8.1 per cent, 36.8 per cent and 37.0 per cent below the base year level under the three reported scenarios, respectively. The ERT noted that the updated emission projections under the 'with measures' and 'with additional measures' scenarios are considerably lower than those presented in the NC5, mainly due to the effects of economic crisis. In contrast, the updated emission projections under the 'without measures' scenario are considerably higher than those presented in the NC5. This is due to the fact that only for this scenario 2000 was used as a reference year, whereas in the projections presented in the NC5, 2006 was used as a reference year for all scenarios. Key results of the Party's GHG emission projections are provided in table 4 and the emission trends are illustrated in the figure below.

67. Under the updated 'with measures' scenario, the ERT noted that projected total GHG emissions are expected to increase by 9 per cent between 2009 and 2020. The contributions of different GHG to the Party's projected total GHG emissions for the period 2009–2020 are as follows: emissions of CO_2, N_2O and F-gases should increase by 12.1 per cent, 8.5 per cent and 14.9 per cent, respectively. Only CH_4 emissions are expected to decrease by 16.6 per cent over the same period.

68. As reflected in table 4, under the 'with measures' scenario in the updated projections, total GHG emissions are projected to reach 47.32 Tg CO_2 eq in 2020. This is 36.2 per cent below the 1990 level. Under the 'with additional measures' scenario in the updated projections, total GHG emissions in 2020 are expected to amount to 45.24 Tg CO_2 eq, i.e. 37.2 per cent below the 1990 level. By gas, the pattern is identical to the 'with measures' scenario, with only CH_4 showing a decreasing trend between 2009 and 2020.

Table 4
Summary of greenhouse gas emission projections for Slovakia

	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]	74.15	2.9	NA
Inventory data 2009[a]	43.43	–39.7	–41.4
Kyoto Protocol base year[b]	72.05	NA	–2.8
Kyoto Protocol target[b]	66.29	–8.0	–10.6
NC5: 'Without measures' projections for 2010[c]	52.70	–26.9	–28.9
'Without measures' projections for 2020[c]	63.51	–11.9	–14.3
'With measures' projections for 2010[c]	51.01	–29.2	–31.2
'With measures' projections for 2020[c]	60.56	–15.9	–18.3
'With additional measures' projections for 2010[c]	49.93	–30.7	–32.7
'With additional measures' projections for 2020[c]	58.55	–18.7	–21.0

	Greenhouse gas emissions (Tg CO_2 eq per year)	*Changes in relation to base year level (%)*	*Changes in relation to 1990 level (%)*
Updated:			
'Without measures' projections for 2010[d]	66.22	–8.1	–10.7
'Without measures' projections for 2020[d]	75.62	5.0	2.0
'With measures' projections for 2010[d]	45.57	–36.8	–38.5
'With measures' projections for 2020[d]	47.32	–34.3	–36.2
'With additional measures' projections for 2010[d]	45.41	–37.0	–38.8
'With additional measures' projections for 2020[d]	45.24	–37.2	–39.0

Sources:

[a] Slovakia's 2011 greenhouse gas (GHG) inventory submission; the emissions are without land use, land-use change and forestry (LULUCF).

[b] FCCC/IRR/2007/SVK.

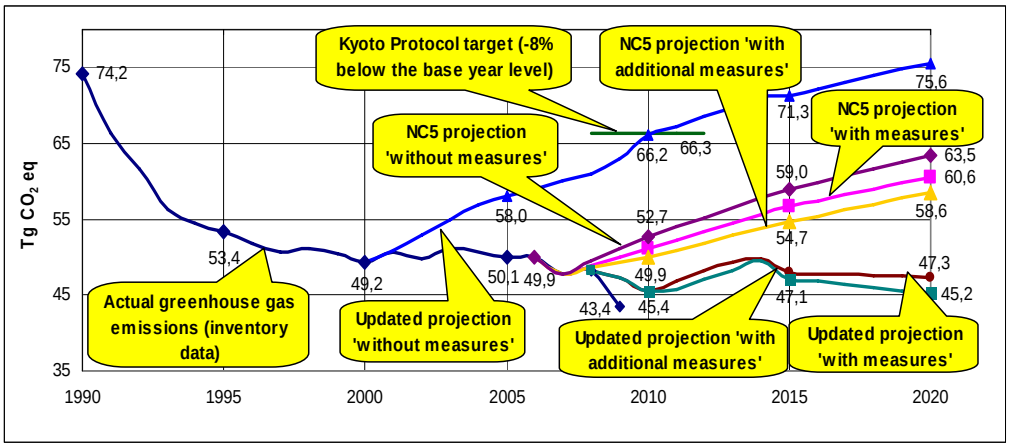
[c] Slovakia's fifth national communication.

[d] Updated projections provided by Slovakia during the review; the projections are for total GHG emissions without LULUCF.

Abbreviation: NA = not applicable.

69. Slovakia has to limit the growth of its emissions from the non-ETS sectors to 13 per cent above the 2005 level by 2020. In 2005, emissions from the non-ETS sectors amounted to around 19.6 Tg CO_2 eq and accounted for approximately 39 per cent of the Party's total GHG emissions. Hence the emissions from the non-ETS sectors could grow up to 22.2 Tg CO_2 eq by 2020. According to the biennial report, the emissions from the non-ETS sectors will remain well below this amount in 2020, as they are projected to reach the level of 16.71 Tg CO_2 eq, 12.89 Tg CO_2 eq and 12.92 Tg CO_2 eq, respectively, under the 'without measures', 'with measures' and 'with additional measures' scenarios. The ERT further noted that based on the information provided, Slovakia will meet the 2020 target for the non-ETS sectors.

Greenhouse gas emission projections



Sources: (1) Data for the years 1990–2009: Slovakia's 2011 greenhouse gas (GHG) inventory submission; the emissions are without land use, land-use change and forestry (LULUCF); (2) Data for the years 2010–2020: Slovakia's fifth national communication and the updated projections provided by Slovakia during the review; the emissions are without LULUCF.

70. The ERT commends Slovakia for providing a mostly transparent and detailed description of the results of the projections. However, the ERT noted that the NC5 does not

present sector-specific information on factors and PaMs affecting emission trends and projections during the period 1990–2020. The ERT therefore encourages Slovakia to provide such information in its next national communication. In addition, the ERT encourages Slovakia to make further improvements to the structure and accuracy of reporting in its next national communication.

3. Total effect of policies and measures

71. In its NC5, Slovakia has not reported the total effect of its PaMs. In response to a question raised by the ERT during the review, Slovakia provided the information on the total effect of its PaMs, which is presented in table 5 below. The ERT noted that this table reflects the projected effects of PaMs in 2010 and 2020 under the 'without measures', 'with measures' and 'with additional measures' scenarios reported in the NC5. However, it does not correspond fully to the information reported in the NC5 on the mitigation effects of individual PaMs. The ERT recommends that Slovakia report, in its next national communication, the total effect of PaMs in terms of GHG avoided or sequestered (on a CO_2 eq basis), presented by GHG, using the same sectoral categories used in the sections on PaMs and on projections, and ensuring the consistency of reporting in the sections on PaMs and on projections.

72. The ERT also noted that additional information on the total effect of PaMs provided by the Party during the review does not reflect the updated projections and the effect of PaMs reported in the biennial report prepared in March 2011. The ERT further noted a negative mitigation effect of PaMs in the industrial processes sector. The ERT also noted that this negative effect could relate to allocation of emission reductions between the sectors; as the effect of PaMs aimed at reducing energy intensity in the industry sector or at promotion of fuel switch, has already been accounted for in the effects of PaMs in the energy sector. This could undermine the effect of PaMs in the industrial processes sector and result in the negative mitigation effect. The ERT encourages the Party to report more transparently on the total effect of its PaMs. Table 5 provides an overview of the total effect of PaMs as reported by Slovakia.

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

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*			
Energy (without CO_2 from transport)	1.02	1.9	0.64	1.2	1.84	3.4	1.39	2.5
Transport – CO_2	0.26	5.4	0.17	3.4	0.63	12.9	0.14	2.8
Industrial processes	–0.05	1.0	0.002	0.04	–0.24	5.2	0.00	0.0
Agriculture	0.41	5.8	0.27	3.8	0.43	6.1	0.50	7.2
Land-use change and forestry	0.001	0.04	NA	NA	0.71	29.9	NA	NA
Waste management	0.01	0.9	NA	NA	0.26	24.7	NA	NA
Total	**1.67**	**2.4**	**1.10**	**1.6**	**2.94**	**4.2**	**2.73**	**3.9**

Source: Information provided during the review.

Note: The total effect of implemented and adopted policies and measures (PaMs) is defined as the difference between the 'without measures' and 'with measures' scenarios; the total effect of planned PaMs is defined as the difference between the 'with measures' and 'with additional measures' scenarios.

Abbreviation: NA = not applicable.

73. According to the information presented in table 5, in 2020, implemented and adopted PaMs would have an effect of 2.94 Tg CO_2 eq or 4.2 per cent of the 1990 emissions. An additional 2.73 Tg CO_2 eq would be added if planned PaMs are implemented effectively. By 2020, both sets of PaMs would therefore have a saving effect of around 8 per cent of the 1990 emissions. By mitigation effect, the highest emission reductions in 2020 are expected from the PaMs in the energy sector (without transport). By relative value compared with total GHG emissions in 1990, the high effects in 2020 are expected from the implemented and adopted PaMs in the LULUCF and waste sectors, and from the planned PaMs in the agriculture sector.

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

74. In its NC5, Slovakia has indicated that it plans to achieve its Kyoto Protocol target by domestic measures only, and it does not plan to use the mechanisms under Articles 6, 12 and 17 of the Kyoto Protocol to reach its Kyoto Protocol target for the first commitment period. During the review, this view was reconfirmed based on the information contained in the biennial report.

75. In accordance with the EU Linking Directive, the companies taking part in the EU ETS can meet their emission reduction targets by acquiring emission allowances from the market. Slovakia's companies can use certified emission reduction units and emission reduction units totalling up to 7 per cent of their total allocated allowances for the period 2008–2012.

76. In its NC5, Slovakia reported on the joint implementation (JI) projects that it benefits from by raising funds to support Slovakia's domestic climate change projects. Following the establishment of its Green Investment Scheme (GIS) in December 2009, Slovakia is aiming to sell its existing surplus of assigned amount units and direct the proceeds to Slovakia's Environmental Fund, which will provide funding for domestic climate change mitigation activities. During the review, Slovakia provided additional information on its GIS and Environmental Fund, indicating the types of funded projects, programmes and procedures for funding and disbursement of funds. The ERT encouraged Slovakia to include the information provided during the review on its use of Kyoto Protocol mechanisms in its next national communication to improve the transparency of reporting on supplementarity.

D. Vulnerability assessment, climate change impacts and adaptation measures

77. In its NC5, Slovakia has provided information on the expected impacts of climate change on the country, on vulnerability assessment and on adaptation options according to the UNFCCC reporting guidelines. There has been an improvement in the reporting of climate change impacts, vulnerability and adaptation by Slovakia as compared with the NC4. Slovakia has reported on the expected impacts of climate change, on vulnerability assessment and on adaptation measures for six sectors, namely hydrology and water resources management, agriculture, forestry, biodiversity, transportation and tourism. During the review, Slovakia indicated to the ERT that a detailed report was being prepared

on the potential impacts of climate change on energy supply, energy infrastructure and public health.

78. It was noted by the ERT that in its NC5, Slovakia has not reported on the potential climate change impacts on social issues, such as migration, urbanization and employment. The ERT has, however, been informed during the review that some of the expected social impacts of climate change in Slovakia are worsening housing conditions in cities and stimulates migration from cities to the countryside. The ERT therefore encourages Slovakia to expedite action on the preparation of the reports regarding climate change impacts on energy supply and public health, so that it can report on them in its next national communication.

79. Slovakia has used emission scenarios and models to predict climate change impacts. The two emission scenarios used are the pessimistic scenario, that is an A2 scenario from the Special report on emission scenarios (SRES A2) by the Intergovernmental Panel on Climate Change, which assumes significant increases in GHG emissions until 2100, and the optimistic scenario (SRES B1), which is based on the implementation of interventions to reduce the GHG emissions.

80. It was further noted that Slovakia has not reported on the actions taken to meet the commitment under Article 4, paragraph 1(e) on cooperation with developing country Parties in preparing for adaptation. The ERT recommends that Slovakia report on the actions being taken to meet commitments under Article 4, paragraph 1(e) of the Convention. The ERT encouraged Slovakia to consider preparation of national adaptation strategy and action plan and to report on them in its next national communication.

81. The NC5 did not provide a framework on responsibilities and involvement of institutions in climate change impacts, vulnerability and adaptation as required by the UNFCCC reporting guidelines. Table 6 summarizes the information on vulnerability and adaptation to climate change presented in the NC5.

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

Vulnerable area	*Examples/comments/adaptation measures reported*
Agriculture and food security	*Vulnerability:* Aridisation of maize production areas; increased occurrence and spread of pests and diseases *Adaptation:* Cultivation and introduction of new agricultural and horticultural species; development of irrigation systems; mulching
Biodiversity and natural ecosystems	*Vulnerability:* Invasion of some species of insects; invasions of vector diseases; decrease in biodiversity *Adaptation:* Phytopathological measures; conservation of the original species spectrum of biodiversity; protection of extremely endangered species and communities; prevention of the drying of wetlands and water biotopes
Forests	*Vulnerability:* Adverse impacts from drought on forest ecosystems; increased risk of forest fires; damage to forest ecosystems as a result of the new dynamics of pests; destruction of spruce forests; shift of the wet snow zone to higher altitudes *Adaptation:* Cultivation of new and more resistant species and change of tree composition; protection of forests against biotic pests; replacement of spruce by beech; reduction of permanently deforested areas
Tourism	*Vulnerability:* Less snow and irregular occurrence of snow cover; the shortening of winter seasons; the restriction of water tourism *Adaptation:* Transfer of skiing activity to higher centres; repurpose threatened winter centres to other activities; support the development of water sports centres at higher altitudes
Transportation	*Vulnerability:* Higher precipitation and higher snow levels in mountains; increase in dangerous meteorological phenomena; decrease in precipitation *Adaptation:* Support of railway transport; improvement of quality of road corridors

Vulnerable area	*Examples/comments/adaptation measures reported*
	and their enlargement, construction of motorways and tunnels; support and development of national air transport; completing the Vah River route and making rivers navigable to the Baltic Sea
Water resources	*Vulnerability:* Threat to water supply and electricity production; increase in the occurrence of drought and floods; change of hydrological cycle, possible influence on cross-boarder cooperation with neighbouring countries *Adaptation:* Water resources protection; increased need to redistribute run-off; identification of prospective and supplementary resources for water supply and their utilization; effective water management; the re-evaluation of flood control reservoirs storage; the utilization of renewable energy sources

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

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

82. In its NC5, Slovakia has reported on financial resources and technology transfer activities in line with Article 4, paragraphs 3, 4 and 5, of the Convention. The ERT commends Slovakia for providing this information, even though Slovakia is not included in Annex II of the Convention.

83. Slovakia provided information on the involvement of institutions in technology transfer as well as financial resources and development projects undertaken in other countries. The information provided in the NC5 indicates that about 94 per cent of the funds provided by Slovakia for development projects went to countries in the Balkan region, the Commonwealth of Independent States and Mongolia. Slovakia has attributed this trend in the provision of financial resources to its national official development assistance (ODA) strategy.

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

84. In its NC5, Slovakia has provided information on public institutions, such as the Slovak Ministry of Foreign Affairs and the Slovak Agency for International Development Cooperation that are responsible for coordination and implementation of official development assistance programmes. Slovakia also reported on the steps being taken to facilitate resource and technology transfer such as the partnership with the United Nations Industrial Development Organization in 2005 and the entry into force in 2007 of Act 617/2007 on ODA. The technology transfer activities of Slovakia focused on promotion of RES, energy efficiency, adaptation measures and support for capacity-building for the implementation of the Convention and its Kyoto Protocol.

F. Research and systematic observation

85. In its NC5, Slovakia has provided information on research and systematic observation to address its commitments under Article 4, paragraph 1(g) and (h), and Article 5 of the Convention. Slovakia has provided information on the general policy on research and systematic observation, such as the Long-Term Plan of the State Science and Technology Policy up to 2015. The plan specifies the objectives and targets in scientific research, human resources development and international cooperation.

86. In its NC5, Slovakia has provided information on climate change related research activities undertaken at both the national and international levels. Slovakia reported on its research activities related to environmental protection, especially climate change adaptation, and climate change impacts in the areas of forestry, agriculture, water and soils. Paleoclimatic research is focused on ecosystem, as an indicator of climate change, and on freshwater crustaceans. Slovakia's socio-economic research was undertaken through participation in international projects, such as the integrated sink enhancement assessment and the development of the EU Biodiversity Strategy. The NC5, however, mentioned that in Slovakia there is no basic research on the development and application of climate models.

87. It was observed by the ERT that Slovakia did not provide any information on the actions taken to meet its commitments under Article 5 of the Convention regarding support to developing countries in the area of research and systematic observation. Slovakia is involved in international activities in the areas of hydrological and meteorological data sharing with the World Data Centres. Slovakia is a member of the European Meteorological Satellite Organization and this makes it possible for it to receive satellite images in real time. The NC5 has reported that through the national monitoring system, Slovakia is involved in the Global Climate Observing System (GCOS). The ERT, however, noted that Slovakia has not provided summary information on its GCOS activities. The ERT therefore recommends that Slovakia expand its reporting on research and systematic observation by including information on GCOS activities and on action taken to support related capacity-building in developing countries.

G. Education, training and public awareness

88. In its NC5, Slovakia has provided information on its actions relating to training and public awareness at both the national and international levels. Slovakia has released a number of publications, periodicals and training materials. The Party facilitates free public access to scientific information on climate change and on the climate system of the Earth.

89. Compared with the NC4, the Party provided more extensive information on the increase in public awareness within Slovakia on climate change, which was achieved through the publications and training materials mentioned above and through various activities hosted by Slovakia, such as conferences, workshops, seminars, festivals and media events. The ERT, however, noted that Slovakia has not provided any information on educational programmes and the extent of public participation in the activities mentioned above. The ERT encourages Slovakia to include such information in its next national communication. The ERT also encourages Slovakia to evaluate the impact of various activities and report on the performance of its various activities and programmes.

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

90. Slovakia has provided most of the 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 7 provides an overview of supplementary information under Article 7, paragraph 2, of the Kyoto Protocol as well as references to the NC5 sections in which this information is provided.

91. In its NC5, Slovakia has not reported on domestic and regional programmes, legislative arrangements, and enforcement and administrative procedures, established pursuant to the implementation of the Kyoto Protocol in a separate section, although such

programmes and arrangements exist, as referred to in section II.B of this report. During the review, the Party provided additional information on the missing reporting element. The technical assessment of the information reported under Article 7, paragraph 2, is contained in the relevant sections of this report.

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

Supplementary information	*Reference*
National registry	NC5, Section 3.4, pp. 48–50
National system	NC5, Section 3.3, pp. 40–48
Supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17	NC5, Section 5.3, pp. 100–101
Policies and measures in accordance with Article 2	NC5, Section 4, pp. 51–71
Domestic and regional programmes and/or legislative arrangements and enforcement and administrative procedures	Not reported
Information under Article 10	NC5, Section 7, page 129
Financial resources	NC5, Section 7, page 129

Note: As a country with an economy in transition, Slovakia does not have to report on the implementation of Article 11 of the Kyoto Protocol, including on the provision of 'new and additional' financial resources.

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

92. Slovakia reported the information requested in section H. Minimization of adverse impacts in accordance with Article 3, paragraph 14, of the annex to decision 15/CMP.1 as a part of its 2011 annual submission; the information is identical to that in its 2010 annual submission. The ERT considers the reported information to be mostly complete and transparent. The ERT recommends that Slovakia improve the completeness and transparency of its reporting by providing information, in its next annual submission, on how it strives to implement its commitments related to the adverse social, environmental and economic impacts on developing country Parties. The ERT noted that Slovakia is not included in Annex II to the Convention, nevertheless it encourages Slovakia to incorporate information, in its next annual submission, on how it gives priority to the actions to implement its commitments under Article 3, paragraph 14, and to continue exploring and reporting on the adverse impacts of the response measures.

93. The NIR 2011 presented several of the initiatives of Slovakia, which were aimed at minimizing adverse impacts on the climate, including support to RES and increased energy efficiency, adaptation measures and early warning systems, and improved water management. Slovakia also has partnerships that help developing countries strengthen the implementation of mitigation measures, such as administrative planning, national emission registries, emission audits, monitoring systems and emission balances. It also reported on cooperation with such Parties on establishment of hydropower plants. In addition, Slovakia has expanded preferential market access for developing and least-developed countries.

III. Conclusions and recommendations

94. The ERT concludes that the NC5 generally provides a good overview of the national climate policy of Slovakia. The NC5 covers almost all sections required by the UNFCCC reporting guidelines, except for the executive summary. The information provided in the NC5 includes most of the mandatory information required by the UNFCCC reporting guidelines, except for some information on national circumstances; PaMs; vulnerability and adaptation; and research and systematic observation. Slovakia reported most of the supplementary information under Article 7 of the Kyoto Protocol, except for information on domestic and regional programmes and/or legislative arrangements and enforcement and administrative procedures, established pursuant to the implementation of the Kyoto Protocol. During the review, the Party provided additional information on the missing reporting elements.

95. Slovakia's total GHG emissions in 2009 were estimated to be 41.4 per cent below its 1990 level excluding LULUCF and 43.9 per cent below that level including LULUCF. Significant emission decreases have been observed mainly during the 1990s driven by the decrease in industrial output and structural changes in Slovakia's industry and economy, caused by the transition from a centrally planned to a market driven economy, as well as by the changes in composition of primary energy use, the reduction of the share of solid fuels in total energy mix, improvements in energy efficiency in energy industries and the increase of the share of the services sector in GDP.

96. In its NC5, Slovakia has reported emission projections up to 2020 under the 'without measures', 'with measures' and 'with additional measures' scenarios, using 2006 as a reference year. According to the NC5, total GHG emissions in 2010 are expected to be 26.9 per cent, 29.2 per cent and 30.7 per cent below the base year level, under the 'without measures', 'with measures' and 'with additional measures' scenarios, respectively. During the review, Slovakia provided the updated projections up to 2030 under three scenarios, using 2008 as a reference year. According to the updated projections, total GHG emissions in 2010 are expected to be 8.1 per cent, 36.8 per cent and 37.0 per cent below the base year level, under the 'without measures', 'with measures' and 'with additional measures' scenarios, respectively. Thus the projections indicate that Slovakia can meet its Kyoto Protocol target (which is an 8 per cent emission reduction) by far, and total GHG emissions are not expected to exceed the Kyoto Protocol target even by 2020, under the 'with measures' and 'with additional measures' scenarios.

97. In its NC5, Slovakia has indicated that it plans to achieve its Kyoto Protocol target by domestic measures only, and it does not plan to use the mechanisms under Articles 6, 12 and 17 of the Kyoto Protocol or expect sizeable contribution from accounting for the KP-LULUCF activities towards the target. During the review, this was reconfirmed based on information provided to the ERT. However, Slovakia has reported that it is engaged in the JI projects under the Kyoto Protocol as a host country.

98. Slovakia has implemented the PaMs in all sectors, most of which are linked to the 2020 EU climate and energy targets. The EU ETS was reported as one of the most effective cross-sectoral policies. In the non-ETS sectors, Slovakia has the target to limit the growth of its emissions to 13 per cent by 2020 above the 2005 levels. Key national PaMs are aimed at increasing the share of RES in gross final energy consumption; and reducing energy use and energy intensity. Slovakia has developed the National Renewable Energy Action Plan with the aim to increase the share of RES to 14 per cent of the country's gross final energy consumption by 2020. Slovakia introduced the Energy Security Concept to ensure energy supply security by 2020, and the Energy Efficiency Action Plan to reduce energy consumption by 9 per cent between 2008 and 2016.

99. Slovakia provided information on the involvement of its national institutions in technology transfer, allocation of financial resources and implementation of climate change mitigation projects in developing countries. It is commendable that Slovakia reported on financial resources and technology transfer, even though it does not have an obligation to do so, as it is not included in Annex II of the Convention.

100. Slovakia has reported on the expected impacts of climate change, vulnerability assessment and adaptation measures in water management, agriculture, forestry, biodiversity, transport and tourism. The water resources sector has been recognized as the most critically important in terms of the impact of climate change.

101. Slovakia reported on the Long-Term Plan of the State Science and Technology Policy up to 2015 that specifies the objectives in research, human resources development and international cooperation related to research and systematic observation. Slovakia is involved in international activities in the areas of climate observations and hydrological and meteorological data sharing led by the European Meteorological Satellite Organization.

102. The ERT concluded that Slovakia's national system continues to perform its required functions as set out in decision 19/CMP.1; that the national registry continues to perform the functions as set out in decision 13/CMP.1 and decision 5/CMP.1, and continues to adhere to the technical standards for data exchange between registry systems in accordance with relevant CMP decisions. The ERT noted that updates of the database and applications, implemented security measures and changes to the national registry software are documented on a regular basis by nominated responsible persons.

103. 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 and 2011 annual submissions is mostly complete and transparent.

104. In the course of the review, the ERT formulated several recommendations relating to the completeness and transparency of Slovakia's reporting under the Convention and its Kyoto Protocol. The key recommendations[8] are that Slovakia:

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

(i) The executive summary that summarizes the information and data from the full document of the national communication;

(ii) More detailed information on national circumstances that affect GHG emissions and removals, and how changes in national circumstances affect GHG emissions and removals over time;

(iii) The total effect of PaMs in terms of GHG avoided or sequestrated (on a CO_2 eq basis), presented by GHG, using the same sectoral categories used in the sections on PaMs and on projections, and ensuring the consistency of reporting in the sections on PaMs and on projections;

(iv) The actions taken to meet the commitments regarding support to developing countries related to capacity-building in the area of research and systematic observation and the summary information on international observation activities related to GCOS.

(b) Improve the transparency of reporting by including:

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

(i) The summary table on PaMs by sector, subdivided by GHG, and more detailed information on the objectives, activities and implementation status of the key PaMs;

(ii) More detailed information on how Slovakia believes its PaMs are modifying longer-term trends in anthropogenic GHG emissions and removals, consistent with the objective of the Convention;

(iii) More complete information on how it strives to implement its PaMs under Article 2 of the Kyoto Protocol in such a way as to minimize adverse effects, including the effects of climate change, effects on international trade and social, environmental and economic impacts on other Parties, especially developing country Parties.

(c) Improve the transparency and completeness of reporting by including, in its next annual submission, detailed information on how it is striving 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.

105. The ERT encourages Slovakia to undertake a number of improvements regarding transparency and completeness of reporting; the most important of these are that the Party:

(a) Report on its most effective and innovative PaMs, the links and overlaps between PaMs;

(b) Provide a description of the mechanisms to ensure monitoring and evaluation of progress of PaMs over time, along with related institutional arrangements; and more information on the impacts and results of completed PaMs;

(c) List the factors, assumptions and PaMs underpinning the projected emission trends and the results of the sensitivity analysis of the impact of key drivers and PaMs on emission projections;

(d) Report more transparently on the use of Kyoto Protocol mechanisms, including existing national arrangements, types of funded projects, programmes and procedures for funding and disbursement of funds.

IV. Questions of implementation

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

Annex

Documents and information used during the review

A. Reference documents

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

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

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

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

FCCC/SBI/2011/INF.1. Compilation and synthesis of fifth national communications. Executive summary. Note by the secretariat. Available at <http://unfccc.int/resource/docs/2011/sbi/eng/inf01.pdf>.

FCCC/SBI/2011/INF.1/Add.1. Compilation and synthesis of fifth national communications. Note by the secretariat. Addendum. Policies, measures, and past and projected future greenhouse gas emission trends of Parties included in Annex I to the Convention. Available at <http://unfccc.int/resource/docs/2011/sbi/eng/inf01a01.pdf>.

FCCC/SBI/2011/INF.1/Add.2. Compilation and synthesis of fifth national communications. Note by the secretariat. Addendum. Financial resources, technology transfer, vulnerability, adaptation and other issues relating to the implementation of the Convention by Parties included in Annex I to the Convention. Available at <http://unfccc.int/resource/docs/2011/sbi/eng/inf01a02.pdf>.

FCCC/SBI/2011/INF.2. Compilation and synthesis of supplementary information incorporated in fifth national communications submitted in accordance with Article 7, paragraph 2, of the Kyoto Protocol. Note by the secretariat. Available at <http://unfccc.int/resource/docs/2011/sbi/eng/inf02.pdf>.

FCCC/ARR/2010/SVK. Report of the individual review of the annual submission of Slovakia submitted in 2010. Available at <http://unfccc.int/resource/docs/2010/arr/svk.pdf>.

FCCC/IRR/2007/SVK. Report of the review of the initial report of Slovakia. Available at <http://unfccc.int/resource/docs/2007/irr/svk.pdf>.

FCCC/IDR.4/SVK. Report on the in-depth review of the fourth national communication of Slovakia. Available at <http://unfccc.int/resource/docs/2007/idr/svk04.pdf>.

Fourth national communication of Slovakia. Available at <http://unfccc.int/resource/docs/natc/slknc4.pdf>.

2010 GHG inventory submission of Slovakia. Available at <http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/5270.php>.

2011 GHG inventory submission of Slovakia. Available at <http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/5888.php>.

B. Additional information provided by the Party

Responses to questions during the review were received from Ms. Miroslava Bujňáková (Ministry of Environment), including additional material on updated policies and measures, emission projections, the national registry and recent climate policy developments in Slovakia. The following document[1] was also provided by Slovakia:

Biennial report of the Slovak Republic pursuant to Article 3(2) of Decision No 280/2004/EC concerning a mechanism for monitoring Community greenhouse gas emissions and for implementing the Kyoto Protocol, Part I and Part II, 2011. Available at <http://cdr.eionet.europa.eu/sk/eu/colqjazmw/envtx_jpg>.

[1] Reproduced as received from the Party.