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Report of the technical review of the sixth national communication of Lithuania

Parties included in Annex I to the Convention are requested, in accordance with decision 9/CP.16, to submit a sixth national communication to the secretariat by 1 January 2014. In accordance with decision 7/CMP.8, Parties included in Annex I to the Convention that are also Parties to the Kyoto Protocol shall include in their sixth national communication 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 technical review of the sixth national communication and supplementary information under the Kyoto Protocol of Lithuania conducted by an expert review team in accordance with the "Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention" and the "Guidelines for review under Article 8 of the Kyoto Protocol".

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I. Introduction and summary

A. Introduction

1. For Lithuania the Convention entered into force on 22 June 1995 and the Kyoto Protocol on 16 February 2005. Under the Convention, Lithuania made a commitment to contribute to the joint European Union (EU) economy-wide emission reduction target of 20 per cent of greenhouse gas (GHG) emissions by 2020 below the 1990 level. Under the Kyoto Protocol, Lithuania committed itself to reducing its GHG emissions by 8 per cent compared with the base year[1] level during the first commitment period, from 2008 to 2012. For the second commitment period of the Kyoto Protocol, from 2013 to 2020, Lithuania committed to contributing to the joint EU[2] commitment to reduce GHG emissions by 20 per cent below the base-year level.

2. This report covers the centralized technical review of the sixth national communication (NC6) of Lithuania, coordinated by the secretariat, in accordance with the "Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention" (decision 23/CP.19) and the "Guidelines for review under Article 8 of the Kyoto Protocol" (decision 22/CMP.1).

3. The review took place from 5 to 10 May 2014 in Bonn, Germany, and was conducted by the following team of nominated experts from the UNFCCC roster of experts: Mr. Hamid Alsadoon (Saudi Arabia), Mr. Kennedy Amankwa (Ghana), Mr. Fernando Farias (Chile), Ms. Violeta Hristova (Bulgaria), Mr. Hans Halvorson Kolshus (Norway), Ms. Asia Mohamed (Sudan), Mr. Rostislav Neveceral (Czech Republic), Mr. Asger Strange Olesen (Denmark), Ms. Natalya Parasyuk (Ukraine), Mr. Marcelo Rocha (Brazil), Ms. Lilia Taranu (Republic of Moldova) and Mr. Harry Vreuls (Netherlands). Mr. Amankwa and Mr. Vreuls were the lead reviewers. The review was coordinated by Ms. Xuehong Wang and Ms. Suvi Monni (UNFCCC secretariat).

4. During the review, the expert review team (ERT) reviewed each section of the NC6. The ERT also reviewed the supplementary information provided by Lithuania as a part of the NC6 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 Lithuania in its 2013 annual submission and previous submissions under Article 7, paragraph 1, of the Kyoto Protocol.

[1] "Base year" refers to the base year under the Kyoto Protocol, which is 1990 for carbon dioxide, methane and nitrous oxide, and 1995 for perfluorocarbons (PFCs), hydrofluorocarbons (HFCs) and sulphur hexafluoride (SF_6). The base-year emissions include emissions from sectors/source categories listed in Annex A to the Kyoto Protocol.

[2] The target under the Convention is taken by the EU and its 28 member States, while the target under the second commitment period of the Kyoto Protocol is taken by the EU, its 28 member States and Iceland. A political statement on fulfilling the target for the second commitment period of the Kyoto Protocol by the EU and its 28 member States jointly with Iceland is included in paragraph 45 of the report of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP) on its eighth session, contained in document FCCC/KP/CMP/2012/13.

5. In accordance with decisions 23/CP.19 and 22/CMP.1, a draft version of this report was communicated to the Government of Lithuania, which provided comments that were considered and incorporated, as appropriate into this final version of the report.

B. Summary

6. The ERT conducted a technical review of the information reported in the NC6 of Lithuania in accordance 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 on NCs). As required by decision 15/CMP.1, supplementary information required under Article 7, paragraph 2, of the Kyoto Protocol[3] is provided in the NC6 (see para. 108 below). The supplementary information on the minimization of adverse impacts referred to in paragraph 4 above is complete and mostly transparent.

7. Lithuania considered part of the recommendations provided in the report of the in-depth review of the fifth national communication of Lithuania.[4] The ERT commended Lithuania for its coherent and consistent reporting. During the review, Lithuania provided further relevant information, for example on its policies and measures (PaMs), the minimization of adverse impacts, and its national system and national registry.

1. Completeness and transparency of reporting

8. Gaps and issues related to the reported information identified by the ERT are presented in table 1 below.

2. Timeliness

9. The NC6 was submitted on 10 January 2014, after the deadline of 1 January 2014 mandated by decision 9/CP.16. Lithuania did not inform the secretariat about its difficulties with the timeliness of its NC6, in accordance with paragraph 79 of the annex to decision 23/CP.19 and paragraph 139 of the annex to decision 22/CMP.1. The ERT noted with concern the delay in the submission of the NC6.

3. Adherence to the reporting guidelines

10. The information reported by Lithuania in its NC6 is mostly in adherence to the UNFCCC reporting guidelines on NCs, as per decision 4/CP.5 (see table 1).

[3] Decision 15/CMP.1, annex, chapter II.
[4] FCCC/IDR.5/LTU.

Table 1
Assessment of completeness and transparency issues of reported information in the sixth national communication of Lithuania[a]

Sections of national communication	*Completeness*	*Transparency*	*Reference to paragraphs*	*Supplementary information under the Kyoto Protocol*	*Completeness*	*Transparency*	*Reference to paragraphs*
Executive summary	Complete	Transparent		National systems	Mostly complete	Transparent	20
National circumstances	Complete	Transparent		National registries	Mostly complete	Transparent	23
Greenhouse gas inventory	Complete	Transparent		Supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17	Complete	Transparent	
Policies and measures (PaMs)	Complete	Mostly transparent	35	PaMs in accordance with Article 2	Mostly complete	Mostly transparent	64, 66
Projections and total effect of PaMs	Mostly complete	Transparent	80	Domestic and regional programmes and/or arrangements and procedures	Complete	Transparent	
Vulnerability assessment, climate change impacts and adaptation measures	Mostly complete	Transparent	90	Information under Article 10[b]	NA	NA	
Financial resources and transfer of technology[c]	NA	NA		Financial resources[c]	NA	NA	
Research and systematic observation	Mostly complete	Transparent	97	Minimization of adverse impacts in accordance with Article 3, paragraph 14	Complete	Mostly transparent	111
Education, training and public awareness	Complete	Transparent					

Abbreviation: NA = not applicable

[a] A list of recommendations pertaining to the completeness and transparency issues identified in this table is included in the chapter on conclusions and recommendations.

[b] For the purposes of reporting in this table, this assessment refers to information provided by the Party on the provisions contained in Article 4, paragraphs 3, 5 and 7, of the Convention reported under Article 10 of the Kyoto Protocol, which is relevant for developed country Parties and other developed Parties included in Annex II to the Convention only. Assessment of the information provided by the Party on the other provisions of Article 10 of the Kyoto Protocol is provided under the relevant substantive headings under the Convention (e.g. research and systematic observation).

[c] Reporting on financial resources under the Kyoto Protocol is relevant for developed country Parties and other developed Parties that are included in Annex II to the Convention (Annex II Parties). As Lithuania is not an Annex II Party, it does not have an obligation to provide information on financial resources under Article 11 of the Kyoto Protocol, including on "new and additional" resources.

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II. Technical review of the reported information in the national communication and supplementary information under the Kyoto Protocol

A. Information on greenhouse gas emissions and national circumstances relevant to greenhouse gas emissions and removals, including other elements related to the Kyoto Protocol

1. Information on relevant national circumstances

11. In its NC6, Lithuania has provided a detailed description of the national circumstances and elaborated on the framework legislation and key policy documents on climate change. Further information on the review of the institutional and legislative arrangements for the coordination and implementation of PaMs is provided in chapter II.B below.

12. In its NC6, Lithuania has provided a description of its national circumstances and information on how these national circumstances affect GHG emissions and removals in Lithuania and how changes in these circumstances affect GHG emissions and removals over time. Information is provided on the government structure, population, geography, climate, economy and relevant economic sectors.

13. From 1990 to 2011, GHG emissions in Lithuania decreased substantially. The decrease in GHG emissions occurred mainly in the early 1990s and was driven by the transition from a centrally planned economy to a market economy and related restructuring in the manufacturing industries, energy industries and agriculture. Since 2000, emissions regained, but they decreased between 2007 and 2009, and increased again by 2011, but at a slower pace than in the period prior to the economic crisis in Europe. In 2011, Lithuania's gross domestic product (GDP) at market price was nearly double that in 1995, while, in 2011, GHG emissions excluding land use, land-use change and forestry (LULUCF) were close to the 1995 level.

14. Lithuania considered the recommendation made in the previous review report with regard to improving transparency by reporting in detail on how its national circumstances affect GHG emissions and removals in the country, particularly for the period 1990–1995. The ERT commended Lithuania for its improved reporting by providing new data and analysis for the indicated period in its NC6.

15. The ERT noted that during the period 1990–2011, Lithuania's population and GDP decreased by 13.5 per cent and increased by 17.0 per cent, respectively, while GHG emissions per GDP and GHG emissions per capita decreased by 61.9 per cent and 48.8 per cent, respectively. Table 2 illustrates the national circumstances of Lithuania by providing some indicators relevant to GHG emissions and removals.

Table 2
Indicators relevant to greenhouse gas emissions and removals for Lithuania

	1990	*2000*	*2005*	*2010*	*2011*	*Change 1990–2011 (%)*	*Change 2010–2011 (%)*
Population (million)	3.70	3.50	3.41	3.29	3.20	–13.5	–2.7
GDP (2005 USD billion using PPP)	46.22	33.31	48.47	51.06	54.06	17.0	5.9
TPES (Mtoe)	16.06	7.13	8.85	7.05	7.29	–54.6	3.4
GHG emissions without LULUCF (kt CO_2 eq)	48 753.87	19 647.80	23 343.38	21 122.60	21 614.23	–55.7	2.3
GHG emissions with LULUCF (kt CO_2 eq)	44 467.29	10 407.79	18 597.80	10 725.11	11 130.74	–75.0	3.8
GDP per capita (2005 USD thousand using PPP)	12.50	9.52	14.20	15.53	16.88	35.0	8.7
TPES per capita (toe)	4.34	2.04	2.59	2.15	2.28	–47.5	6.0
GHG emissions per capita (t CO_2 eq)	13.18	5.61	6.84	6.43	6.75	–48.8	5.0
GHG emissions per GDP unit (kg CO_2 eq per 2005 USD using PPP)	1.05	0.59	0.48	0.41	0.40	–61.9	–2.4

Sources: (1) GHG emissions data: Lithuania's 2013 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.

2. Information on the greenhouse gas inventory, emissions and trends

16. Lithuania has provided a summary of information on GHG emission trends for the period 1990–2011. This information is fully consistent with the 2013 national GHG inventory submission. Summary tables, including trend tables for emissions in carbon dioxide equivalent (CO_2 eq) (given in the common reporting format tables), are provided in an annex to the NC6. During the review, the ERT took note of the recently submitted 2014 annual submission, in which Lithuania reported 21,622.29 kt CO_2 eq of total national GHG emissions excluding LULUCF for 2012.

17. Total GHG emissions[5] excluding emissions and removals from LULUCF decreased by 55.7 per cent between 1990 and 2011, whereas total GHG emissions including net emissions or removals from LULUCF decreased by 75.0 per cent over the same period. The decrease in total GHG emissions occurred mainly in the early 1990s and was mainly driven by the transition to a market economy. In 2011, CO_2 emissions (excluding LULUCF) accounted for 64.6 per cent of total GHG emissions, and were 61.0 per cent lower than in 1990. Compared with 2010, CO_2 emissions increased by 4.7 per cent including LULUCF and by 1.8 per cent excluding LULUCF.

[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.

18. The largest source of CO_2 emissions is the energy sector, which contributes 80.6 per cent of total CO_2 emissions. Nitrous oxide (N_2O) is the second most important GHG, accounting for 20.2 per cent of total GHG emissions in 2011. N_2O emissions decreased by 39.2 per cent between 1990 and 2011. Agriculture is the main source of N_2O emissions and contributed 75.7 per cent of total N_2O emissions in 2011. Methane (CH_4) emissions accounted for 14.1 per cent of total GHG emissions in 2011 and decreased by 47.0 per cent between 1990 and 2011. The largest source of CH_4 emissions is agriculture, contributing 54.9 per cent in 2011. Fluorinated gases (F-gases) contributed 1.1 per cent to total GHG emissions in 2011. An analysis of the drivers of GHG emission trends in each sector is provided in chapter II.B below. Table 3 provides an overview of GHG emissions by sector from 1990 to 2011.

Table 3
Greenhouse gas emissions by sector in Lithuania, 1990–2011

	GHG emissions (kt CO_2 eq)				*Change (%)*		*Share[a] by sector (%)*	
Sector	*1990*	*2000*	*2010*	*2011*	*1990 –2011*	*2010 –2011*	*1990*	*2011*
1. Energy	32 744.95	10 807.37	12 757.79	11 820.46	–63.9	–7.3	67.2	54.7
A1. Energy industries	13 549.96	5 052.10	5 318.43	4 446.47	–67.2	–16.4	27.8	20.6
A2. Manufacturing industries and construction	5 756.59	990.72	1 125.31	1 166.61	–79.7	3.7	11.8	5.4
A3. Transport	7 559.80	3 406.26	4 563.90	4 481.71	–40.7	–1.8	15.5	20.7
A4.–A5. Other	5 728.25	1 109.37	1 480.31	1 455.83	–74.6	–1.7	11.7	6.7
B. Fugitive emissions	150.35	248.92	269.85	269.83	79.5	0.0	0.3	1.2
2. Industrial processes	4 396.79	3 019.01	2 230.00	3 737.55	–15.0	67.6	9.0	17.3
3. Solvent and other product use	197.52	173.54	87.41	85.95	–56.5	–1.7	0.4	0.4
4. Agriculture	10 292.09	4 457.30	4 984.65	4 979.97	–51.6	–0.1	21.1	23.0
5. LULUCF	–4 286.58	–9 240.01	–10 397.49	–10 483.49	144.6	0.8	–8.8	–48.5
6. Waste	1 122.51	1 190.58	1 062.74	990.31	–11.8	–6.8	2.3	4.6
GHG total with LULUCF	**44 467.29**	**10 407.79**	**10 725.11**	**11 130.74**	**–75.0**	**3.8**	**NA**	**NA**
GHG total without LULUCF	**48 753.87**	**19 647.80**	**21 122.60**	**21 614.23**	**–55.7**	**2.3**	**100.0**	**100.0**

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

Abbreviations: GHG = greenhouse gas, LULUCF = land use, land-use change and forestry.

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

3. National system

19. Lithuania provided in its NC6 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, of the Kyoto Protocol (decision 19/CMP.1). The description includes most of the elements as required in decision 15/CMP.1. The NC6 also contains a

reference to the description of a national system provided in the national inventory report of the 2013 annual submission.[6]

20. The NC6 does not include information required by the annex to decision 15/CMP.1 regarding the name and contact information for the national entity and its designated representative with overall responsibility for the national inventory of Lithuania. During the review, Lithuania provided the information to the ERT, also explaining that it was presented in its biennial report, which is an annex to the NC6. The ERT recommends that Lithuania include the name and contact information for the Party's national entity and its designated representative in its next NC.

4. National registry

21. In its NC6, Lithuania has provided information on the national registry in accordance with the annex to decision 13/CMP.1 and the annex to decision 5/CMP.1. The ERT took note of the review of the changes to the national registry as reflected in the report of the individual review of the annual submission of Lithuania submitted in 2012, as the review report for the 2013 annual submission was not available at the time of the review.

22. In its NC6, Lithuania described the changes in its registry, specifically due to the centralization of the European Union Emissions Trading System (EU ETS) operations into a single EU registry operated by the European Commission called the Consolidated System of European Union registries (CSEUR). CSEUR is a consolidated platform which implements the national registries in a consolidated manner and was developed together with the new EU registry.

23. The NC6 does not include information required by the annex to decision 15/CMP.1 on the name and contact information of the registry administrator designated by the Party to maintain the national registry. During the review, Lithuania provided this information, explaining also that it was presented in the Party's national inventory report submitted in 2014. The ERT recommends that Lithuania include such information in its next NC.

24. Lithuania considered a recommendation made in the previous review report with regard to providing information about implemented security measures and changes to the national registry software. The ERT commended Lithuania for its improved reporting, which includes information on the security measures of the new national registry.

25. Lithuania also considered the recommendation made in the previous review report with regard to referencing to the required public information that is considered confidential and citing the regulation that supports its confidentiality. The ERT commended Lithuania for its improved reporting by providing information in its NC6 about this matter.

5. Domestic and regional programmes and/or legislative arrangements and procedures related to the Kyoto Protocol

26. Lithuania has reported in its NC6 the required information on domestic and regional programmes and/or legislative arrangements and procedures related to the Kyoto Protocol.

27. Overall responsibility for climate change policymaking lies within the Ministry of Environment and a number of national institutions are involved in the implementation of this policy. The Ministry of Environment is also the main body responsible for the

[6] At the time of the review, the report of the individual review of the annual submission of Lithuania submitted in 2013, containing, among others, the review of the changes to the national system, was not available.

administration of Lithuania's participation in joint implementation (JI) and clean development mechanism (CDM) projects.

28. The key framework climate and energy policy and primary legal basis in Lithuania is the EU climate and energy package. The main legal document which sets the climate change management system in Lithuania is the Law on Financial Instruments for Climate Change Management. This law aims to, among others, define the powers of public authorities and institutions, and provide measures to manage climate change in Lithuania in order to implement the Party's obligations under the Convention and its Kyoto Protocol. The law also sets the main provisions on the administrative structure for the administration and implementation of JI and CDM projects. During the review, the Party indicated that procedures for cases which are in non-compliance with its commitments under the Kyoto Protocol are also defined in the law.

29. As an EU member State, Lithuania is also subject to EU climate policy and, thus, it applies EU common and coordinated PaMs that are relevant to climate change. The EU ETS sets an EU-wide cap for installations included in the EU ETS (mainly large point sources such as power plants and industrial facilities). Therefore, national targets under EU legislation only take into account the emissions outside the EU ETS (as defined in the EU effort-sharing decision (ESD) (406/2009/EC)).

30. The implementation of the Kyoto Protocol is underpinned by the Strategy for the National Climate Change Management Policy until 2050. The strategy contains mitigation goals and objectives for sectors included and not included in the EU ETS. According to the ESD, Lithuania's target is to limit growth of GHG emissions from sectors not included in the EU ETS (excluding LULUCF) to a 15 per cent increase by 2020 compared with the 2005 level. The Inter-institutional Action Plan on the implementation of the Goals and Objectives for 2013–2020 of the Strategy for the National Climate Change Management Policy was approved in order to implement the strategy's goals and objectives for 2013–2020.

31. Lithuania reports in its NC6 that legal acts and other information related to climate change are publicly accessible at the Internet portals of the Ministry of Environment,[7] the Environmental Protection Agency,[8] the Lithuanian Hydrometeorological Service[9] and the Lithuanian Environment Investment Fund.[10] All legal acts are also available at the Internet site of the Parliament of the Republic of Lithuania.[11]

32. In its NC6, Lithuania provided a description of national legislative arrangements and administrative procedures that seek to ensure that the implementation of activities under Article 3, paragraph 3, and elected activities under Article 3, paragraph 4, of the Kyoto Protocol also contribute to the conservation of biodiversity and the sustainable use of natural resources. The policy of the Lithuanian forest economy and its implementation strategy (Official Gazette 2002, no. 93-4029) aim to safeguard the sustainability of forest ecosystems, maintain biodiversity and improve forest health.

[7] <http://www.am.lt>.
[8] <http://klimatas.gamta.lt/cms/index>.
[9] <http://www.meteo.lt/klim_kaita.php>.
[10] <http://www.laaif.lt>.
[11] <http://www.lrs.lt>.

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

33. Lithuania has provided in its NC6 comprehensive and well-organized information on its package of PaMs implemented, adopted and planned in order to fulfil its commitments under the Convention and its Kyoto Protocol.

1. Policies and measures related to implementation of commitments under the Convention

34. In its NC6, Lithuania reported on its PaMs adopted, implemented and planned in achieving its commitments under the Convention and its Kyoto Protocol. Lithuania provided information on PaMs by sector and by gas and a description of the principal PaMs. The NC6 contains, with a few exceptions, a set of PaMs similar to those in the NC5.

35. The recommendation made in the previous review report with regard to how PaMs are modifying longer-term trends in anthropogenic GHG emissions and removals in accordance with the objective of the Convention has to some extent been considered in the NC6. During the review, Lithuania provided additional information, referring in particular to the Strategy for the National Climate Change Management Policy until 2050. To improve transparency, the ERT recommends that Lithuania report more explicitly on how it believes its PaMs are modifying longer-term trends in anthropogenic GHG emissions and removals, in its next NC.

36. The ERT noted that the NC6 does not include information on the costs of PaMs, non-GHG mitigation benefits and how PaMs interact with other PaMs at the national level. During the review, Lithuania informed the ERT that it plans to provide additional information about the costs of PaMs in its next NC. The ERT welcomes this planned improvement, and encourages Lithuania to report on non-GHG mitigation benefits and how PaMs interact with other PaMs at the national level, in its next NC.

37. The NC6 does not contain explicit information on policies and practices which encourage activities that lead to greater levels of anthropogenic GHG emissions than would otherwise occur and the rationale for such actions. During the review, Lithuania provided some additional information thereon. To improve transparency, the ERT encourages Lithuania to explicitly report, in its next NC, on policies and practices that lead to greater levels of anthropogenic GHG emissions than would otherwise occur, and to provide a rationale for such actions.

38. The ERT notes that only a subset of the PaMs described in the NC6 is included in the summary tables with estimated mitigation impacts for the years 2010, 2015 and 2020. During the review, Lithuania informed the ERT about the approach it has used for the estimation of the effect of PaMs. Lithuania elaborated that it has chosen to use a top-down approach for the estimation of the effect of energy efficiency and renewable energy PaMs (see also para. 81 below), that there were no PaMs in place prior to 1995 and that PaMs up to 2005 had only a minor mitigation effect. In order to increase transparency, the ERT encourages Lithuania to include more information about PaMs prior to 2010 in its next NC.

39. In the summary tables in chapter 4 of the NC6 on PaMs, it is not indicated for any of the PaMs listed whether or not they are included in the ‘with measures’ projection scenario. During the review, Lithuania informed the ERT that all the measures presented in the summary tables are included in the ‘with measures’ projection scenario. The ERT encourages Lithuania to provide such information in its next NC.

40. Lithuania presents in its NC6 the required emission reductions for the non-ETS sectors (sectors not included in the EU ETS) in case the EU moves from a 20 to a 30 per

cent emission reduction target by 2020. The PaMs related to the 30 per cent target are called ‘additional measures’ in the NC6. The NC6 does not contain transparent information with regard to how the effect of these additional PaMs has been estimated. During the review, Lithuania provided additional information on these measures and the estimated mitigation impact. The ERT encourages Lithuania to provide more transparent information on how the effects of additional PaMs have been estimated in its next NC.

41. In the NC6, several encouragements made in the previous review report were taken into consideration. These include explanations on the relationship and linkages between the strategies and programmes and the role of subnational and local government in the context of climate change policy. The ERT commends Lithuania for this improved reporting.

2. Policy framework and cross-sectoral measures

42. The key framework climate and energy policy and primary legal basis for the policy in Lithuania is the EU climate and energy package. The main legal document which sets the climate change management system in Lithuania is the Law on Financial Instruments for Climate Change Management. In addition, the Strategy for the National Climate Change Management Policy until 2050 was approved in 2012. The strategy contains climate change mitigation and adaptation targets and objectives. In the strategy, short-term (until 2020) targets, and indicative mid-term (until 2030 and 2040) and long-term (until 2050) milestones were incorporated into the national regulation. To facilitate the implementation of the strategy’s goals and objectives, the Government of the Republic of Lithuania approved the Inter-institutional Action Plan on the implementation of the Goals and Objectives for 2013–2020 of the Strategy for the National Climate Change Management Policy.

43. Lithuania’s NC6 describes the institutional arrangements that define and implement climate change policy in the country. The Ministry of Environment organizes and coordinates the implementation of the strategy. The Ministries of Energy, Finance, Transport and Communications, Health, Education and Science, Economy and Agriculture and other institutions are also involved in their areas of competence. The National Committee on Climate Change, a body made up of representatives of ministries and other organizations, is responsible for coordinating national climate change policy and its composition was renewed in January 2013.

44. The main PaMs, defined in the different national strategies, and having an impact on climate change mitigation, are related to the promotion of renewable energy sources (RES), an increase in energy efficiency, a reduction in the use of nitrates, the minimization of landfilled biodegradable and municipal waste, and an increase in the forest area. EU structural funds for 2007–2013, the EU ETS, the Special Programme for Climate Change, the Programme of Modernization of Multi-apartment Buildings and feed-in tariffs provide economic incentives for emission reduction. Also, voluntary initiatives, such as the Covenant of Mayors or environmental management systems, are in place. The cross-sectoral measures have resulted in GHG emissions reduction in different sectors.

45. Some PaMs are deferred to the local level. In its NC6 and during the review, Lithuania provided comprehensive information on the role of subnational or regional and local government in the context of climate change policy. The NC6 provides information about the Covenant of Mayors under which the involved municipalities increase energy efficiency and the use of RES in their territories. Table 4 provides a summary of the reported information on the PaMs of Lithuania.

Table 4
Summary of information on policies and measures reported by Lithuania

Sectors affected	*List of key policies and measures*	*Estimate of mitigation impact (kt CO_2 eq)*		
		2010	*2015*	*2020*
Policy framework and cross-sectoral measures	Assistance through the EU structural funds[a]	IE	IE	IE
	EU ETS[a]	IE	IE	IE
	ESD	NR	NR	NR
	Special Programme for Climate Change	NR	NR	NR
Energy				
Renewable energy	Enhancement of the use of RES through various measures such as feed-in tariffs, subsidies and implementation of JI projects on wind power[b]	310	479	747
Energy efficiency	Increase of energy efficiency through various measures such as loans and subsidies for the modernization of multi-apartment and public buildings, voluntary agreements with energy companies, and modernization and development of the existing district heating systems using EU structural funds	145	815	1 496
Transport	Promotion of biofuel production and consumption	215	278	423
Industrial sectors	Increased use of best available techniques following implementation of EU directive 2010/75/EU	NA	500	500
	Hosting of JI projects in chemical industry	1 513	1 467	1 467
Agriculture	The EU nitrates directive (91/676/EEC)	100[c]	100[c]	100[c]
Forestry	Afforestation of low fertility soils	NR	840	1 680
Waste management	Reduced amount of landfilled biodegradable waste through implementation of the National Strategic Waste Management Plan	251[d]	359[d]	538[d]
	Collection and use of methane from all existing and new landfills	940	1 440	1 940

Note: The greenhouse gas emission reduction estimates given for some measures are reductions in carbon dioxide equivalent for 2010, 2015 and 2020.

Abbreviations: ESD = European Union effort-sharing decision, EU = European Union, EU ETS = European Union Emissions Trading System, IE = included elsewhere, JI = joint implementation, NA = not applicable, NR = not reported, RES = renewable energy sources.

[a] During the review, the Party explained that the impact of the EU ETS and assistance from the EU structural funds is included in the impacts of "Enhancement of the use of RES" and "Increase of energy efficiency".

[b] The impact of transportation biofuels is not included in this measure; it is presented in the transport sector.

[c] This effect is based on information provided during the review and is different from the information reported by Lithuania in its NC6 (700, 1,200 and 1,700 kt CO_2 eq). See paragraph 59 below for details.

[d] Only the reduction in CH_4 emissions due to the lowered amounts of landfilled biodegradable municipal waste was evaluated. An increase in CO_2 emissions due to increased waste incineration was not evaluated.

3. Policies and measures in the energy sector

46. Between 1990 and 2011, GHG emissions from the energy sector decreased by 63.9 per cent (20,924.50 kt CO_2 eq), mainly owing to Lithuania's transition to a market economy. The trend in GHG emissions from fuel combustion showed notable decreases in transport (40.7 per cent, or 3,078.08 kt CO_2 eq), energy industries (67.2 per cent, or 9,103.49 kt CO_2 eq) and manufacturing industries and construction (79.7 per cent, or 4,589.98 kt CO_2 eq).

47. ***Energy supply***. Lithuania has limited energy resources and its energy dependency has increased due to the decommissioning of a nuclear power plant at the end of 2009 and the increase in energy consumption. Currently, more than half of the country's required electricity is imported from neighbouring countries (mostly from the Russian Federation). Key measures for the reduction of GHG emissions in the energy sector include the promotion of renewable energy use and an increase in energy efficiency. Construction of a new nuclear power plant is included in the NC6 as a planned measure. However, an advisory referendum on the construction of a new nuclear power plant was held in 2012 and the proposal was rejected by 65 per cent of voters. Therefore, it is currently unclear whether the new nuclear power plant will be constructed.

48. ***Renewable energy sources***. In 2012, almost 10 per cent of Lithuania's electricity was produced using RES. In total, 82.9 per cent of this was produced by wind power and hydropower plants, while the rest was produced from biomass, biogas and photovoltaic power plants. The NC6 provides several clear targets for renewable energy, drawn from several strategies. The target that by 2010, 7 per cent of all the electricity consumed in Lithuania should be produced from RES was achieved. According to the EU directive on promotion of the use of renewable energy (2009/28/EC), by 2020, energy from RES shall amount to 23 per cent of the total final energy balance. In 2020, not less than 20 per cent of electricity is to be generated from RES. Also in 2020, RES should generate no less than 60 per cent of the heat from the district heating sector. By 2025, RES (including biofuel) will make up 20 per cent of the total primary energy supply.

49. The NC6 specifies the various measures designated for the achievement of these targets, but provides limited information about how each measure contributes to the achievement of these targets and how the measures are designed and operate. During the review, Lithuania informed the ERT that the measures differ between the energy subsectors. For example, electricity from RES is promoted mainly through a feed-in tariff. Lithuania also provided more details to the ERT concerning these tariffs. The ERT encourages Lithuania to report on the various measures to promote RES in more detail, including their mitigation effects, in its next NC.

50. ***Energy efficiency***. Lithuania has two targets related to energy efficiency. A 9 per cent final energy saving across the whole economy should be achieved over a nine-year period from 1 January 2008, measured against a 2005 baseline level. Additionally, energy efficiency of economy should increase by 1.5 per cent compared with the 2009 level annually until 2020. These goals are planned to be achieved through the increase of energy efficiency in buildings, voluntary agreements with energy companies and the modernization and development of existing district heating systems using the EU structural funds.

51. ***Residential and commercial sectors***. The NC6 specifies the measures that are applied to increase energy efficiency and the most important measures are the modernization of multi-apartment and public buildings. At least 70 per cent of multi-apartment buildings are to be modernized by 2020, leading to a reduction in thermal demand per unit of used dwelling area of up to 30 per cent, compared with the 2004 level. Loans and subsidies are used for the modernization of multi-apartment and public buildings.

52. ***Transport sector***. The most important PaM in this sector is the promotion of biofuel production and consumption. The target for biofuel to make up 5.75 per cent of the fuel mix of transport fuels by 2010 has been reached and the target for 2025 is 15 per cent. There is a mandatory requirement for the fuel mix sold in Lithuania, and fiscal incentives and subsidies are in place to support the purchase of the raw materials used to generate biofuel. During the review, Lithuania informed the ERT that a number of procedures have been set up in order to ensure the sustainability of the biofuels used to reach the target. The ERT encourages Lithuania to include more information about biofuels in its next NC.

53. Other measures in the transport sector include fiscal incentives to stimulate liquefied natural gas (LNG) consumption, improved communication infrastructure and increased efficiency of fuel consumption. No mitigation effect has been estimated for these measures, but during the review, Lithuania informed the ERT that the mitigation effect of LNG to fuel public buses is planned to be assessed and reported in its next NC. The ERT welcomes this planned improvement.

54. ***Industrial sector***. The NC6 describes thoroughly the use of emission permits, the practice of best available techniques, and environmental management systems in the industrial sector. Lithuania plans to reduce emissions from the production of cement, for which moving a single cement production facility from the 'wet' to the 'dry' technological process is estimated to result in emission savings of 500 kt CO_2 eq per year. A project to achieve this outcome is currently being implemented. Limited information is provided about the voluntary agreements between government and industry that have been set up to increase the efficient use of energy, but Lithuania provided additional information during the review. The ERT encourages Lithuania to provide such information in its next NC.

4. Policies and measures in other sectors

55. Between 1990 and 2011, GHG emissions from the industrial processes (including solvent and other product use), agriculture and waste sectors decreased by 38.8 per cent (6,215.14 kt CO_2 eq), mainly owing to a significant decrease in agricultural activities.

56. ***Industrial processes***. Between 1990 and 2011, GHG emissions from the industrial processes sector decreased by 15.0 per cent (659.24 kt CO_2 eq), mainly owing to the transition to a market economy during the early 1990s. Emissions fell between 1990 and 1993 and then increased until 2007. Emissions fell steeply between 2007 and 2009 owing to the global financial crisis, but increased again in 2011 following the economic recovery.

57. Three JI projects have been implemented in chemical industry, leading to reduced N_2O emissions from nitric acid production.

58. PaMs are in place to reduce emissions of F-gases and volatile organic compounds (VOCs). The GHG mitigation impacts of these policies are not quantified in the NC6. During the review, Lithuania informed the ERT that the effect of PaMs addressing VOC emissions was not estimated due to insufficient data. With regard to the F-gas emissions, Lithuania informed the ERT that there are plans to estimate the mitigation impact of F-gas regulation and to provide the estimate in its next NC. The ERT welcomes this planned improvement.

59. ***Agriculture***. Between 1990 and 2011, GHG emissions from the agriculture sector decreased by 51.6 per cent (5,312.12 kt CO_2 eq), mainly owing to a significant decline in

agricultural activity between 1990 and 1995. The NC6 describes several measures in the agriculture sector (such as the Rural Development Programme 2007–2013 and the implementation of agri-environmental programmes), but the mitigation impact is provided only for the implementation of the EU nitrates directive (91/676/EEC). During the review, Lithuania informed the ERT that the effect reported in its NC6 of the implementation of the EU nitrates directive is a cumulative impact over a period of years and that the annual effect of the implementation of the directive for 2010, 2015 and 2020 would be 100 kt CO_2 eq. The ERT encourages Lithuania to provide more information on how the effect has been calculated, in its next NC.

60. During the review, Lithuania informed the ERT that the estimated mitigation effects of biogas plants that produce biogas from animal manure are included under the measure on promoting the use of RES. Lithuania further informed the ERT that new measures in relation to the agriculture sector are defined in the Inter-institutional Action Plan (see para. 30 above) regarding, for example, the promotion of sustainable agricultural production, organic farming, decreased use of fertilizers and pesticides for crop production, change of feed content, and the promotion of biomethane installation technologies for manure management through the use of financial resources from the EU Rural Development Programme for the period 2014–2020. Lithuania further stated that there are plans to evaluate the effects of the new agricultural PaMs.

61. ***LULUCF***. The LULUCF sector was a net removal of 10,483.49 kt CO_2 eq in Lithuania in 2011 and net GHG removals have increased by 144.6 per cent since 1990. The trend was driven by increased removals in forest land. In the Programme on the Increased Afforestation of Lithuania (Official Gazette 2003, no. 1-10; and Official Gazette 2004, no. 188-7039; repealed since 14 October 2012) and the policy of the Lithuanian forest economy and its implementation strategy (Official Gazette 2002, no. 93-4029), Lithuania has a goal to increase the forest area by 3 per cent by 2020 and in the Inter-Institutional Action Plan (see para. 30 above) the minimum annual removals by sinks in the LULUCF sector are set to reach 3.7 Mt CO_2 eq. The NC6 specifies several measures that address the forestry sector, including the afforestation of low fertility soils for which a mitigation effect has been estimated for 2015 and 2020 (see table 4 above).

62. ***Waste management***. Between 1990 and 2011, GHG emissions from the waste sector decreased by 11.8 per cent (132.19 kt CO_2 eq), mainly owing to a decline in emissions from wastewater handling, but also due to declining amounts of waste generated and better waste management. The target set in the National Strategic Waste Management Plan is that the amount of landfilled biodegradable municipal waste is not more than 50 per cent by 2013 and not more than 35 per cent by 2020, compared with the amounts in 2000. There is also a measure to collect and use methane from all existing and new landfills. The mitigation effects of these PaMs have been estimated in the NC6. In addition, new biogas plants have been constructed in wastewater treatment plants. In 2013, the first waste incineration plant began operating in Lithuania (Klaipėda) with the construction of the second waste incineration plant planned in Vilnius.

5. Policies and measures related to implementation of commitments under the Kyoto Protocol

63. In the NC6, Lithuania reported on its package of PaMs adopted, implemented and planned in achieving its commitment under the Kyoto Protocol, including information on cooperation with other Parties in achieving this commitment.

64. The NC6 does not include information required by the annex to decision 15/CMP.1 on steps taken to promote and/or implement any decisions by the International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO) in order to limit or to reduce GHG emissions not included in the Montreal Protocol from aviation and marine bunker fuels. During the review, Lithuania informed the ERT that it supports

the initiatives by ICAO and IMO and that Lithuanian aircraft operators have been participating in the EU ETS since 1 January 2012. Lithuania also informed the ERT of the proposal by the European Commission for the "Regulation on monitoring, reporting and verification of CO_2 from maritime transport" (June 2013). The ERT reiterates the recommendation made in the previous review report that Lithuania include such information in its next NC.

65. In its NC6, Lithuania reported information on how it strives to implement PaMs under Article 2 of the Kyoto Protocol in such a way as to minimize adverse effects, including the adverse effects of climate change and effects on international trade and social, environmental and economic impacts, on other Parties, especially developing country Parties, albeit not in a fully transparent manner. Further information on how Lithuania strives to implement its commitments under Article 3, paragraph 1, of the Kyoto Protocol in such a way as to minimize adverse social, environmental and economic impacts on developing country Parties, as reported in the 2013 annual submission, is presented in chapter III.B below.

66. The NC6 outlines several of the Party's actions that take into account the minimization of the adverse effects of PaMs by Lithuania from two perspectives: through the funding of projects abroad as a part of the fast-start financing programme and the channelling of bilateral funding for projects in developing countries; and through the application of policies based on the Strategy for the National Climate Change Management Policy and its action plan. During the review, Lithuania provided the ERT with additional information; however, the ERT considered that the information provided was not sufficiently elaborated to provide an understanding of how the reported activities contribute to the minimization of adverse effects, including the adverse effects of climate change and effects on international trade and social, environmental and economic impacts on other Parties, especially developing country Parties. The ERT recommends that Lithuania provide more information on this matter in its next NC.

C. Projections and the total effect of policies and measures, including information on supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol

67. In its NC6, Lithuania has reported on three GHG emission projection scenarios: 'without measures', 'with measures' and 'with additional measures', until 2030.

1. Projections overview, methodology and key assumptions

68. The GHG emission projections provided by Lithuania in the NC6 include a 'with measures', a 'with additional measures' and a 'without measures' scenario until 2030, presented relative to actual inventory data for 1990, 2010 and 2011. The projections are presented on a sectoral basis, using the same sectoral categories used in the PaMs section. The 'with measures' projection is also presented on a gas-by-gas basis for the following GHGs: CO_2, CH_4, N_2O, perfluorocarbons (PFCs), hydrofluorocarbons (HFCs) and sulphur hexafluoride (SF_6) (treating PFCs and HFCs collectively in each case). All projections are also provided for a national total, using global warming potential values. The 'with measures' projection related to fuel sold to ships and aircraft engaged in international transport was reported separately and not included in the totals.

69. In the NC6, Lithuania's reporting of the 'existing measures' and 'additional measures' scenarios and of the total effect of PaMs (tables 15–20 in the NC6) was not fully transparent due the lack of a description of the definition of the scenarios and of the methodology used for the calculation of the total effect of PaMs. During the review, the

Party provided further information which clarified that the definitions of the scenarios correspond to those provided in the UNFCCC reporting guidelines on NCs. 'Existing measures' corresponds to 'implemented and adopted measures' and 'additional measures' corresponds to 'planned measures'. The ERT encourages Lithuania to clearly indicate these definitions in its next NC, in order to enhance transparency.

70. In its NC6, Lithuania reported on the changes to the projections compared with the NC5. The most significant differences occur in the energy and LULUCF sectors, due to the recalculations made in the national GHG inventory as a result of improvements in activity data, emission factors and the move to higher-tier methods. The other reason for the difference in the projections in the NC6 compared with the NC5 was the estimated share of imported and domestically produced electricity after the closure of the Ignalina nuclear power plant in 2009. There are no changes in the modelling framework used for the projections. The changes in methodology led to a decrease in projected emissions in all scenarios reported in the NC6 compared to those reported in the NC5. The ERT commends Lithuania for providing a detailed analysis of these differences in its NC6.

71. The NC6 does not provide information about the key underlying assumptions and values of variables such as GDP growth, population growth, tax levels and international fuel prices. During the review, Lithuania explained that several agencies prepared sector-specific activity data projections and the Environmental Protection Agency converted them into GHG emissions by using emission factors from the national GHG inventory. In order to do so, the separate institutions involved used assumptions, for example on GDP, fuel prices and population, but these assumptions were not harmonized across the institutions involved. The ERT encourages Lithuania to provide more detailed information about the key underlying assumptions and approaches used for the projections in its next NC, in order to enhance transparency.

72. In its NC6, Lithuania provided a graph illustrating the sensitivity of energy sector scenario results to energy intensity per capita for the period 2020–2030. The ERT encourages Lithuania to carry out further analyses of the sensitivity of projections to underlying key assumptions, such as GDP, population and energy prices, and to report thereon in its next NC.

2. Results of projections

73. For the first commitment period of the Kyoto Protocol, Lithuania committed itself to reducing its GHG emissions by 8 per cent compared with the base-year level. This yields an annual average target of 45,461.24 kt CO_2 eq for the first commitment period of the Kyoto Protocol (2008–2012). According to the projections presented in the NC6, Lithuania will overachieve this target by domestic efforts alone.

74. For the second commitment period of the Kyoto Protocol, from 2013 to 2020, Lithuania committed to contributing to the joint EU economy-wide emission reduction target to reduce GHG emissions by 20 per cent compared with the base-year level. Lithuania's target for the non-ETS sectors is +15 per cent by 2020 compared with the 2005 level under the ESD.

75. The projected emissions under the 'with measures' scenario in the NC6 show an increasing trend in overall GHG emissions from 2011 to 2030. Total emissions amounted to 21,614.23 kt CO_2 eq in 2011, of which CO_2, CH_4 and N_2O emissions accounted for 13,970.47, 3,045.57 and 4,370.88 kt CO_2 eq, respectively. Total GHG emissions according to the 'with measures' scenario are expected to amount to 25,532.62 kt CO_2 eq in 2020, of which CO_2, CH_4 and N_2O emissions are projected to account for around 17,246.48, 3,031.50 and 5,071.66 kt CO_2 eq, respectively. This represents changes of +23.4, –0.5 and +16.0 per cent, respectively, compared with the 2011 levels. Total GHG emissions

according to the 'with measures' scenario are expected to amount to 30,247.71 kt CO_2 eq in 2030, of which CO_2, CH_4 and N_2O emissions are projected to account for 20,454.37, 3,595.36 and 6,015.00 kt CO_2 eq, respectively. This represents an increase of 46.4, 18.1 and 37.6 per cent, respectively, compared with the 2011 levels. The level of emissions of HFCs and SF_6 is expected to decrease by 19.5 per cent from 2011 to 2020 and to stay constant between 2020 and 2030. PFCs emissions are reported as "not applicable" (NA) and "not occurring" (NO) for the entire time-series.

76. In the 'with measures' scenario, a decrease in GHG emissions in 2020 compared with 2011 is expected to occur only in the waste sector (29.1 per cent), whereas in other sectors, emissions are expected to increase by 25.5, 23.2, 15.8 and 13.8 per cent, respectively, in the energy, transport, industrial processes and agriculture sectors. In the 'with additional measures' scenario, the largest decrease in emissions in 2020 compared with 2011 is expected to occur in the waste sector (65.2 per cent), followed by the energy sector (8.8 per cent), whereas in the transport, industrial processes and agricultural sectors, the emissions are expected to increase by 11.3, 8.8 and 2.6 per cent, respectively. In the 'without measures' scenario it is expected that emissions from the energy, transport, industrial processes, agriculture and waste sectors will increase by 56.1, 32.6, 67.3, 48.0 and 221.1 per cent, respectively, in 2020 compared with 2011.

77. Lithuania reports in its biennial report that for emission reductions in the period 2013–2020, there is a country-specific target to limit emissions growth to 15 per cent for the non-ETS sectors by 2020 compared with the 2005 level, based on EU legislation. The ERT noted that the separate reporting of projected emissions for the ETS and non-ETS sectors could improve the transparency of the information provided and enable an assessment by the ERT of the Party's progress towards its emission reduction target.

78. The projected emission levels under different scenarios and information on the Kyoto Protocol targets and the quantified economy-wide emission reduction target are presented in table 5 and the figure below.

3. Total effect of policies and measures

79. In the NC6, Lithuania presented the estimated and expected total effect of implemented and adopted PaMs, in accordance with the 'with measures' definition, compared with a situation without such PaMs for 2010, 2015, 2020 and 2030. Lithuania also presented relevant information on factors and activities for each sector, and the total effect of planned PaMs for the period 2010–2030.

80. During the review, Lithuania informed the ERT that the total effect of PaMs was not estimated for years prior to 2010 as the impact of measures implemented before 2005 is estimated to be minor. In the NC6, the total effect of PaMs is not presented by gas (on a CO_2 eq basis). The ERT recommends that Lithuania present the total effect of PaMs by gas in its next NC.

81. The NC6 does not provide transparent information on how the total effect of PaMs was calculated. During the review, Lithuania explained that it applies a top-down approach, and that the impact of increased energy efficiency and increased use of RES is estimated for a collection of PaMs, based on the national binding targets for energy efficiency and renewable energy. The ERT noted that the reported total effect of implemented and adopted PaMs equals the difference between the 'without measures' and 'with measures' scenarios, except for the LULUCF sector. The ERT further noted that the total effect of planned PaMs equals the difference between the 'with measures' and 'with additional measures' scenarios, except for the energy and transport sectors in 2030. The ERT encourages Lithuania to provide detailed information on the models and/or approaches used to

calculate the total effect of PaMs in its next NC in order to enhance the transparency of its reporting.

82. Lithuania reported in the NC6 that the total estimated effect of adopted and implemented PaMs is 10,491 kt CO_2 eq in 2020 including LULUCF, but the estimated effect for the agriculture sector was updated during the review (see para. 59 above). When the update is taken into account, the total effect of adopted and implemented PaMs is 8,891 kt CO_2 eq in 2020 including LULUCF. According to the information reported in the NC6, PaMs implemented in the waste and energy sectors will each deliver the largest emission reductions, followed by the effect of PaMs implemented in the industrial processes and transport sectors. PaMs in the LULUCF sector are expected to increase removals by 1,680 kt CO_2 eq in 2020. The most effective PaMs and drivers behind GHG emission reductions are described in chapter II.B above. Table 6 provides an overview of the total effect of PaMs as reported by Lithuania, including updated information provided during the review.

Table 5
Summary of greenhouse gas emission projections for Lithuania

	Greenhouse gas emissions (kt CO_2 eq per year)	*Changes in relation to the base year[a] level (%)*	*Changes in relation to the 1990 level (%)*
Kyoto Protocol base year[b]	49 414.39	NA	1.4
Kyoto Protocol target for the first commitment period (2008–2012)	45 461.24	–8.0	–6.8
Kyoto Protocol target for the second commitment period (2013–2020)[c]	Not available yet		
Quantified economy-wide emission reduction target under the Convention[d]	Not available yet		
Inventory data 1990[e]	48 753.87	–1.3	NA
Inventory data 2011[e]	21 614.23	–56.3	–55.7
Average annual emissions for 2008–2011[e]	22 019.89	–55.4	–54.8
'Without measures' projections for 2020[f]	34 343.61	–30.5	–29.6
'With measures' projections for 2020[f]	25 532.62	–48.3	–47.6
'With additional measures' projections for 2020[f]	21 293.71	–56.9	–56.3
'Without measures' projections for 2030[f]	39 058.72	–21.0	–19.9
'With measures' projections for 2030[f]	30 247.71	–38.8	–38.0
'With additional measures' projections for 2030[f]	22 527.08	–54.4	–53.8

[a] "Base year" in this column refers to the base year used for the target under the Kyoto Protocol.

[b] The Kyoto Protocol base-year level of emissions is provided in the initial review report contained in document FCCC/IRR/2007/LTU.

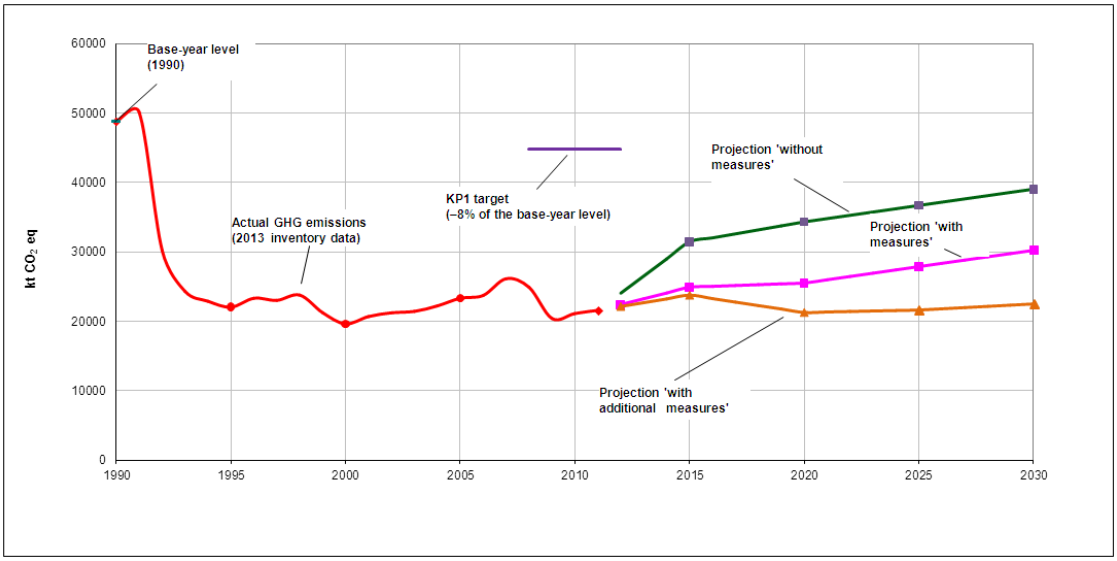
[c] The Kyoto Protocol target for the second commitment period (2013–2020) is a joint target for the European Union and its 28 member States and Iceland. The target is to reduce emissions by 20 per cent by 2020 compared with the base year (1990) level. The target for sectors not covered by the European Union Emission Trading System is +15 per cent by 2020 compared with 2005 for Lithuania under the European Union effort-sharing decision.

[d] The quantified economy-wide emission reduction target under the Convention is a joint target for the European Union and its 28 member States. The target is to reduce emissions by 20 per cent by 2020 compared with the base year (1990) level.

[e] Lithuania's 2013 greenhouse gas inventory submission; the emissions are without land use, land-use change and forestry.

[f] Lithuania's sixth national communication and first biennial report.

Greenhouse gas emission projections



Sources: (1) Data for the years 1990–2011: Lithuania's 2013 greenhouse gas inventory submission; the emissions are without land use, land-use change and forestry; (2) Data for the years 2012–2030: Lithuania's sixth national communication and first biennial report; the emissions are without land use, land-use change and forestry.

Abbreviations: GHG = greenhouse gas, KP1 = first commitment period of the Kyoto Protocol.

Table 6
Projected effects of planned, implemented and adopted policies and measures in 2020 and 2030

Sector	*Effect of implemented and adopted measures (kt CO_2 eq)*	*Relative value (% of 1990 emissions)*	*Effect of planned measures (kt CO_2 eq)*	*Relative value (% of 1990 emissions)*	*Effect of implemented and adopted measures (kt CO_2 eq)*	*Relative value (% of 1990 emissions)*	*Effect of planned measures (kt CO_2 eq)*	*Relative value (% of 1990 emissions)*
	2020				*2030*			
Energy (without transport)	2 243	8.9	2 519	10.0	2 243	8.9	2 519	10.0
Transport	423	5.7	534	7.1	423	5.7	534	7.1
Industrial processes	1 967	42.8	269	5.9	1 967	42.8	269	5.9
Agriculture	100	1.0	560	5.4	100	1.0	560	5.4
LULUCF	1 680	39.2	0	0	1 680	39.2	0	0
Waste management	2 478	220.8	357	31.8	2 478	220.8	357	31.8
Total (excluding LULUCF)	**7 211**	**14.8**	**4 239**	**8.7**	**7 211**	**14.8**	**4 239**	**8.7**

Source: Lithuania's sixth national communication and information provided during the review.

Note: The estimated effect of implemented and adopted policies and measures in the agriculture sector was updated during the review, and the total is calculated by the expert review team using the updated information. For information on the methodology used to calculate the total effect of policies and measures, see paragraph 81 above.

Abbreviation: LULUCF = land use, land-use change and forestry.

83. The ERT noted that several PaMs have an impact on both emissions included in and excluded from the EU ETS. The ERT noted that the separate reporting of the effects of PaMs for the ETS and non-ETS sectors could improve the transparency of the information provided and enable an assessment by the ERT of the Party's progress towards its emission reduction target.

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

84. In its NC6, Lithuania provided information on how its use of the mechanisms under Articles 6, 12 and 17 of the Kyoto Protocol is supplemental to domestic action, although it did not elaborate on supplementarity as such. Lithuania reported that it participates as a host country in JI projects, and that government institutions or private-sector companies in Lithuania do not participate in the CDM. The ERT further noted that as Lithuania's average GHG emissions during the period 2008–2011 were 51.6 per cent below the average annual target of the Kyoto Protocol for the first commitment period, Lithuania is expected to meet its target by domestic action alone.

85. According to the NC6, in the period 2008–2012, Lithuania hosted 25 JI projects most of which were on the development of wind power parks. The implemented JI projects reduced emissions by 8,531.31 kt CO_2 eq during the period 2008–2012. The largest emission reduction was achieved in projects reducing N_2O emissions in chemical industry (7,643.02 kt CO_2 eq for the period 2008–2012). The JI projects on renewable energy reduced emissions by 888.30 kt CO_2 eq during the period 2008–2012.

D. Provision of financial resources and technology transfer to developing country Parties, including information under Articles 10 and 11 of the Kyoto Protocol

86. Lithuania is not a Party included in Annex II to the Convention (non-Annex II Party) and is therefore not obliged to adopt measures and fulfil obligations as defined in Article 4, paragraphs 3–5, of the Convention. However, its NC6 did include some relevant information on the provision of financial resources, and additional information was provided during the review. The ERT assessed this information and its findings are reflected in this report. The ERT commends Lithuania for the information provided.

Financial resources, including "new and additional" resources and resources under Article 11 of the Kyoto Protocol

87. In its NC6, Lithuania provided information on financial resources related to the implementation of the Convention through bilateral, regional and multilateral channels in 2011 and through multilateral channels in 2012. These financial resources were committed by Lithuania as fast-start finance.

88. The multilateral support was provided through the World Bank for the Energy Sector Management Assistance Programme (in 2011 and 2012) and through the European Bank for Reconstruction and Development (EBRD) for the Eastern Europe Energy Efficiency and Environmental Partnership fund (in 2011). The bilateral and regional support in 2011 was provided to the Republic of Moldova for adaptation (capacity-

building) and to Georgia for mitigation (energy and public awareness). Examples of projects financed by Lithuania include strengthening of administrative capacity and competence regarding the certification of organic agriculture in the Republic of Moldova and promoting alternative energy sources for heating in rural areas in Georgia. Table 7 summarizes information on financial resources.

Table 7
Summary of information on financial resources for 2011–2012
(United States dollars)

	Years of disbursement	
Allocation channel of public financial support	*2011*	*2012*
Contributions through multilateral channels, including regional development banks	70 635	37 965
Contributions through bilateral and regional channels	44 954	0

E. Vulnerability assessment, climate change impacts and adaptation measures

89. In its NC6, Lithuania has provided the required information on the expected impacts of climate change in the country and on adaptation options. However, the ERT noted that Lithuania's outline of the action taken to implement Article 4, paragraph 1(e), of the Convention with regard to adaptation was incomplete in the NC6, but during the review, the Party provided the required information.

90. According to its NC6, Lithuania cooperates with other countries in preparation for adaptation by actively taking part in the development and implementation of a strategy and action plan for adaptation to climate change in the Baltic Sea region as part of the Baltadapt project. However, the ERT noted that in its NC6, Lithuania did not provide an outline of the action taken to implement Article 4, paragraph 1(e), of the Convention, on cooperation for the development of integrated plans for coastal zone management, water resources and agriculture, particularly in countries affected by drought and desertification, as well as floods. During the review, Lithuania informed the ERT that it is planning to support countries affected by drought, desertification and floods through multilateral institutions such as the World Bank, EBRD and other multilateral scientific, technological and training programmes. The Contribution Agreement with EBRD was signed in the first half of 2014, after which funds were disbursed to different climate change mitigation and adaptation projects. The ERT recommends that Lithuania provide, in its next NC, complete information on the outline of the action taken to implement Article 4, paragraph 1(e), of the Convention with regard to adaptation in line with the information provided to the ERT during the review.

91. Table 8 summarizes the information on vulnerability and adaptation to climate change presented in the NC6.

Table 8
Summary of information on vulnerability and adaptation to climate change

Vulnerable area	*Examples/comments/adaptation measures reported*
Agriculture and food security	*Vulnerability*: changes in temperature and precipitation will lead to a shift of plants, a longer vegetation period, changes in crop productivity and quality of production, an abundance of pests, and an increased spread of diseases; more frequent extremes (heatwaves, prolonged droughts, etc.) will have: (i) direct impacts on animal health, slowing down their growth, decreasing productivity and affecting reproduction; and (ii) indirect impacts, such as changes in feeding resources and a decrease in grain production *Adaptation*: increasing the capacities of observation networks and renewing the measurement equipment of automatic agro-meteorological stations; creating a system for forecasting diseases and pests of agricultural plants; conducting research on climate change impacts on biological diversity; preparing planning documents for climate change adaptation; preparing a research programme for investigation and selection of adaptive species
Biodiversity and natural ecosystems	*Vulnerability*: degradation of ecosystems and habitats; extinction or withdrawal of species; the appearance of new species and connections in ecosystems due to eutrophication; drought; change of habitat; acceleration of the natural succession of changes *Adaptation*: organizing and implementing the national science programme "Ecosystems in Lithuania: Climate Change and the Human Impact"; conducting research on climate change impacts on biological diversity; preparing: (i) planning documents for climate change adaptation, especially on the protection of biological diversity in different sectors, including protected areas; (ii) environmental management plans for territories that are important for the protection of birds and their habitat; and (iii) a biological diversity protection programme
Coastal zones	*Vulnerability*: rising sea level and more frequent winter storms will cause more frequent floods in the coastal region; the average height of waves will increase due to the destruction of Baltic sea shores and the degradation of dunes; growing water mineralization of the Curonian Lagoon will have an impact on fish resources in this basin *Adaptation*: coordination of the implementation and evaluation of measures for coastal zone management that are foreseen in the Coastal Zone Management Programme 2008–2013; approval of the Coastal Zone Management Programme 2014–2020; preparation of: (i) a recreational plan for beaches in the continental part of the coastal zone; (ii) a study on the protection and use of the coastline of the Curonian Lagoon
Drought	*Vulnerability*: droughts of different intensity occurring more frequently will lead to decreased soil humidity and, consequently, will cause more intensive defoliation of trees, and negatively influence the chemical composition of the soil and the amount of soil microorganisms *Adaptation:* not reported
Fisheries	*Vulnerability*: changes in spawning conditions may cause the inevitable loss of individual populations and fish stocks; due to the migration of various sea organisms, the disappearance of local species and the spread of new species is possible *Adaptation:* not reported
Forests	*Vulnerability*: climate change leads to increased activity of pests and spreads diseases; fir groves become weaker and drier, defoliation of trees increases and productivity of forests changes. Increased amount of storms and squalls, especially in the western part of Lithuania, causing a greater amount of slash

Vulnerable area	*Examples/comments/adaptation measures reported*
	Adaptation: application of incentivizing measures for non-smooth forest cuttings in private forests; foreseeing measures for the integration of elements of 'close-to-nature' forestry in certain forest types; preparation of an inventory and recommendations for the management and restoration of endangered or degraded forest ecosystems
Human health	*Vulnerability*: more frequent heatwaves increase risks for elderly people and children; increased spread of infectious diseases through water-based agents in water and food; more illnesses and deaths due to air pollution with chemical and biological materials, including a risk of the spread of allergens, and due to the inferiority of drinking water influenced by floods and changes in groundwater level; changes in the periods of pollen spread; changes in diseases spread by bloodsucking insects and ticks
	Adaptation: developing guidelines and measures on adaptation to the negative impacts of climate change for public health; increasing conveyance of residents and health-care specialists about climate change threats to public health; establishing a programme for prophylaxis of diseases (allergic and infectious) related to climate change; improving cooperation in climate change adaptation between Lithuanian health institutions and international organizations; preparing: (i) a study on the identification of threats to public health and the presentation of recommendations; (ii) a national public health and heat prevention plan and implementing it on a municipal level; and (iii) a list of climate change and health indicators, and a methodology for their estimation
Infrastructure and economy	*Vulnerability*: the changing weather will have a negative impact on infrastructure, beaches and summer resorts. Climate change has increased the prevalence of insect-spread diseases, which will have major impacts on tourism. Rising water levels may have serious consequences on the transport sector. Roads may be flooded during cold periods of the year and it may cause inaccessibility of some locations; increased frequency of extreme phenomena may have a negative impact on communication services
	Adaptation: preparation of technical regulations for the building of bridges or roads through territories prone to flooding; and development of a science programme or studies for various sectors (spatial planning, transport, energy, waste, industry, agriculture, etc.) for vulnerability assessment and adaptation options
Water resources	*Vulnerability*: due to increased precipitation it is projected that the general volume of river outflows and winter floods will increase
	Adaptation: establishment of a model for flood forecasting; preparation and presentation for adoption of the maps of flood threats and flood risks; preparation of flood risk management plans which identify territories that may be flooded and assess the potential negative impact on these territories; implementation of infrastructure and modernization projects of surface wastewater management; updating management plans of river (Nemunas, Venta, Lielupė, Dauguva) basin areas to assess the impact of climate change on water basins and, in accordance with assessment results, to develop measures for climate change adaptation or mitigation

92. Within the scope of vulnerability assessment, climate change impacts and adaptation measures, the focus of Lithuania's NC6 is on adaptation. The ERT noted that in the NC6, most of the information on climate change projections and the expected impacts of climate change for different sectors and vulnerability assessment, are the same as those reported in the NC5, as the information is based on the same information source – a study entitled "Climate change impact assessment on ecosystems, biodiversity, water resources,

agriculture, forestry and human health and the strategic plan for mitigation of consequences" – and no new studies or analysis have yet been performed. Lithuania reported that the Inter-institutional Action Plan (see para. 30 above) sets out the framework for climate change adaptation in the country. During the review, Lithuania informed the ERT that as part of this action plan, studies for risk and vulnerability assessment, and adaptive capacity will be initiated in 2014, in order to select the most cost-efficient measures and indicators for the evaluation of their impacts. The studies will cover various sectors, including transport, energy, territory planning, waste, industry, agriculture, fisheries, forestry, tourism and health. Lithuania also informed the ERT that it intends to present the results of these studies in future NCs. The ERT welcomes this intention and encourages Lithuania to provide up-to-date information on the expected impacts of climate change and on vulnerability assessment, in its next NC.

93. Lithuania reported in its NC6 that in the twenty-first century, air temperature is expected to rise, in particular in the cold period of the year (a projected increase of 4 to 8 °C). Air humidity and precipitation is projected to increase in the cold period but to strongly decrease in the warm period.

94. The most significant recent project regarding the evaluation of climate change impacts is "BaltCICA: climate change impacts, costs and adaptation in the Baltic Sea Region", which was carried out in the period 2009–2012 to identify the most imminent problems that climate change is likely to cause in the Baltic Sea region and to prepare the most appropriate and cost-efficient strategies, focusing on spatial planning. During the review, Lithuania provided more information on the climate models used in the project.

95. During the review, the Party informed the ERT that adaptation studies used for the preparation of the NC6 were carried out in line with the Intergovernmental Panel on Climate Change (IPCC) *Technical Guidelines for Assessing Climate Change Impacts and Adaptations* and the United Nations Environment Programme *Handbook on Methods for Climate Change Impacts Assessment and Adaptation Strategies*. The ERT encourages Lithuania to include this information in its next NC.

F. Research and systematic observation

96. In its NC6, Lithuania has provided information on its actions relating to research and systematic observation, and addressed both domestic and international activities, including the Global Climate Observing System (GCOS) and the IPCC. Furthermore, Lithuania has provided a concise summary of information on GCOS activities.

97. Regarding research and systematic observation related capacity-building in developing countries, Lithuania refers in chapter 8.3 of its NC6 to adaptation projects implemented in and financial support provided to developing countries, such as the Republic of Moldova and Georgia. While acknowledging the reported information, the ERT considered that the capacity-building referred to was not related to research and systematic observation. Lithuania also informed the ERT, during the review, that there are currently no plans to initiate capacity-building activities in developing countries to establish and maintain observing systems and related data and monitoring systems due to limited financial and human resources at the Lithuanian Hydrometeorological Service. The ERT reiterates the recommendation made in the previous review report that Lithuania provide, in its next NC, information on the action taken to support research and systematic observation related capacity-building in developing countries.

98. Lithuania reported in its NC6 that since joining the EU, research, technological development and innovation policy has rapidly grown in importance. An important step was taken when the government reached an agreement to invest a significant amount of

funding (10 per cent of the total EU assistance through structural funds for 2007–2013) in research. A versatile mix of new policy instruments and competitive research programmes was planned; most of the research activities started in 2009–2010. The legal framework for prioritizing and budgeting public investments in research, technological development and innovation is embedded in two strategic documents: the Lithuanian Progress Strategy "Lithuania 2030" and the Lithuanian Innovation Strategy for 2010–2020. One of the six national research and development programmes approved by the Research Council of Lithuania in 2008 provides competitive funding for research related to climate change. The national research programme "Ecosystems in Lithuania: Climate Change and Human Impact" has an overall budget of EUR 5.7 million for 2010–2014.

99. International and domestic actions relating to climate modelling and monitoring include: (i) COST (European Cooperation in Science and Technology) Action ES0907 "INTegrating Ice core, MArine and TErrestrial records – 60,000 to 8,000 years ago (INTIMATE)", the aim of which is to prepare common measures and methods in global research networks with the reconstruction of sudden and extreme climate changes in Europe in the period 60,000–8,000 years ago; (ii) PALEOAUGALIJA, which is a project that aims to assess the change of climate conditions and its impact on the history of flora; and (iii) "My Ocean" and "My Ocean2", the aim of which is to establish a unified and consolidated system of monitoring and prognosis of European oceans, including sea safety, management of sea resources, monitoring of sea and coastal zones, water quality and pollution, climate and seasonal prognosis. In the "My Ocean2" project, the European Centre for Ocean Monitoring and Forecasting (ECOMF) will be established.

100. In its NC6, Lithuania provided concise information on GCOS activities and explained that the Lithuanian Hydrometeorological Service under the Ministry of Environment is the main institution that participates in GCOS activities. During the review, Lithuania provided more information on its atmospheric observation activities, including on the Vilnius Meteorological Station (MS), which is included in the GCOS Surface Network; Kaunas MS, which is included in the Global Atmosphere Watch (GAW) network and GCOS Upper Air Network; and Preila MS, which is a GAW station.

101. The Party also explained during the review that the Centre of Marine Research under the Environmental Protection Agency is responsible for Baltic Sea monitoring. Activities in marine observations include Baltic Sea and Curonian Lagoon monitoring with a new ship purchased in 2012, and sea-level monitoring at Klaipeda seaport under the European Sea Level Service. The Party further explained that due to limited capacity, the Lithuanian institutions do not actively participate in the programmes of the Global Terrestrial Observing System, but terrestrial observations are in place: the national monitoring programme for 2011–2015 (approved by the government) includes all the requirements for environmental monitoring under the provisions of national, EU and international legal acts and agreements.

102. The ERT considered that the information provided by Lithuania during the review improved transparency, and encourages it to report such information on its systematic observation activities in the next NC, as required by paragraph 64 of the UNFCCC reporting guidelines on NCs.

G. Education, training and public awareness

103. In its NC6, Lithuania has provided information on its actions relating to education, training and public awareness at both the domestic and international levels. Compared to the NC5, the Party provided more extensive information on the roles and involvement of the public and non-governmental organizations (NGOs) in framing climate change policy

and awareness-raising and funds for programmes of public environmental awareness. The ERT commends Lithuania for its more complete reporting.

104. During the review, Lithuania informed the ERT that most awareness-raising projects are financed by EU structural funds, which require clear monitoring of the ongoing project and evaluation of the conclusions. Furthermore, public awareness-raising is evaluated using the following criteria set in the Inter-institutional Action Plan (see para. 30 above): the increase in public environmental activity and awareness, and the number of projects implemented.

105. Lithuania reported in its NC6 that environmental education is incorporated into the educational programmes of primary and secondary schools. Climate change education is also incorporated into the higher-level education system. Lithuania also participates in a number of international projects, such as the ECOWILL – "ECOdriving – Widespread Implementation for Learner Drivers and Licensed Drivers"; CO2OL BRICKS – "Climate Change, Cultural Heritage and Energy Efficient Monuments"; "Expected Climate Change and Options for European Silviculture"; and BalticClimate – "Baltic Challenges and Chances for Local and Regional Development Generated by Climate Change". Lithuania also participates in the EU climate change campaign "A world you like. With a climate you like", which covers travel and transport, production and innovation, building and living, shopping and eating, and reuse and recycling.

106. The Public Information Division of the Ministry of Environment plays an important role in information dissemination and public involvement. Furthermore, almost EUR 9 million has been allocated to projects related to public awareness from EU structural funds for the period 2007–2013.

107. NGOs engaged in environmental topics are active in Lithuania, they: organize events related to public education, collaboration and sharing of experience related to climate change; participate in the development of national and international legislation; prepare and issue publications about climate change, its consequences and measures for its prevention; and participate in projects related to climate change awareness-raising. The active NGOs include the Baltic Environmental Forum Lithuania, Sustainable Development Initiatives and the Lithuanian Fund for Nature.

III. Summary of reviewed supplementary information under the Kyoto Protocol

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

108. Supplementary information provided by Lithuania under Article 7, paragraph 2, of the Kyoto Protocol in its NC6 is mostly complete and mostly transparent. The supplementary information is located in different sections of the NC6. Table 9 provides an overview of supplementary information under Article 7, paragraph 2, of the Kyoto Protocol as well as references to the NC6 chapters in which this information is provided.

109. Lithuania has not reported the following elements of the supplementary information required under Article 7, paragraph 2, of the Kyoto Protocol: an element of the national system and the national registry; and the identification of steps taken to promote and/or implement any decisions by ICAO and IMO in order to limit or to reduce GHG emissions not included in the Montreal Protocol from aviation and marine bunker fuels. The technical assessment of the information reported under Article 7, paragraph 2, of the Kyoto Protocol

is contained in the relevant sections of this report. The ERT recommends that Lithuania include these reporting elements in its next NC.

Table 9
Overview of supplementary information under Article 7, paragraph 2, of the Kyoto Protocol

Supplementary information	*Reference to the sixth national communication*
National registry	Section 3.4
National system	Section 3.3
Supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17	Section 5.3
Policies and measures in accordance with Article 2	Section 4.2
Domestic and regional programmes and/or legislative arrangements and enforcement and administrative procedures	Section 4.1
Information under Article 10	Sections 3.3, 4, 6.4, 7–9
Financial resources	Not applicable

Note: Reporting on financial resources under the Kyoto Protocol is relevant for developed country Parties and other developed Parties that are included in Annex II to the Convention (Annex II Parties). As Lithuania is not an Annex II Party, it does not have an obligation to provide information on financial resources under Article 11 of the Kyoto Protocol, including on "new and additional" resources.

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

110. Lithuania 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 2013 annual submission. The ERT considers the reported information not sufficiently transparent with regard to how the activities being undertaken contribute to the minimization of adverse social, environmental and economic impacts on developing countries. During the review, Lithuania provided the ERT with the additional information on how it strives to implement its commitments under Article 3, paragraph 1, of the Kyoto Protocol in such a way as to minimize adverse social, environmental and economic impacts on developing country Parties, particularly those identified in Article 4, paragraphs 8 and 9, of the Convention.

111. The 2013 national inventory report, NC6 and the additional information provided during the review presented the initiatives of Lithuania aimed at minimizing adverse impacts from two perspectives: through the funding of projects abroad as a part of the fast-start financing programme and the channelling of bilateral funding for projects in developing countries; and through the application of policies based on the Strategy for the National Climate Change Management Policy by 2050 and its Inter-institutional Action Plan (see para. 30 above). The ERT recommends that Lithuania provide more information on how the activities being undertaken contribute to the minimization of adverse social, environmental and economic impacts on developing countries.

IV. Conclusions and recommendations

112. The ERT conducted a technical review of the information reported in the NC6 of Lithuania according to the UNFCCC reporting guidelines on NCs. The ERT concludes that the NC6 provides a good overview of the national climate policy of Lithuania. The information provided in the NC6 includes most elements of the supplementary information under Article 7 of the Kyoto Protocol with the exception of information on: an element of the national system and the national registry; and the implementation of ICAO and IMO decisions. During the review, Lithuania provided additional information on all missing elements, as well as on its PaMs and the minimization of adverse impacts.

113. Lithuania's emissions for 2011 were estimated to be 55.7 per cent below its 1990 level excluding LULUCF and 75.0 per cent below including LULUCF. The decrease in GHG emissions occurred mainly in the early 1990s and was driven by the transition from a centrally planned to a market-based economy and the related restructuring of manufacturing industries, energy industries and agriculture. Following an increase since 2000, emissions decreased between 2007 and 2009 due to the global economic crisis, and increased again by 2011 due to the economic recovery, but at a slower pace than in the period prior to the economic crisis in Europe.

114. In its NC6, Lithuania presents GHG projections for the period from 1990 to 2030. Three scenarios are included: the baseline ('without measures') scenario; the 'with measures' scenario; and the 'with additional measures' scenario. The projected reductions in GHG emissions under the baseline scenario, in relation to 1990, and under the 'with measures' and 'with additional measures' scenarios, are 29.6, 47.6 and 56.3 per cent, respectively, in 2020.

115. Lithuania's target under the first commitment period of the Kyoto Protocol is an average 8 per cent emission reduction during the period 2008–2012 compared with the base-year level. Based on a comparison of the target and the average annual emissions for 2008–2011, Lithuania is in a position to meet its Kyoto Protocol target for the first commitment period by domestic actions alone.

116. For the second commitment period of the Kyoto Protocol, from 2013 to 2020, Lithuania committed to contributing to the joint EU economy-wide quantified emission reduction target to reduce GHG emissions by 20 per cent compared with the base-year level by 2020. Lithuania reports that for the period 2013–2020, there is a country-specific target to limit emissions growth to 15 per cent for the non-ETS sectors by 2020 compared with the 2005 level, based on the EU legislation. Under the 'without measures', 'with measures' and 'with additional measures' projection scenarios, the emissions (covering both the ETS and non-ETS sectors) are expected to be 47.1 per cent above, 9.4 per cent above and 8.8 per cent below the 2005 level by 2020, respectively. The ERT noted that the separate reporting of projected emissions for the ETS and non-ETS sectors could improve the transparency of the information provided and enable an assessment by the ERT of Lithuania's progress towards its emission reduction target.

117. The NC6 contains information on how Lithuania's use of the mechanisms under Articles 6, 12 and 17 of the Kyoto Protocol is supplemental to domestic action, although it did not elaborate on supplementarity as such. Lithuania is not planning to make use of the Kyoto Protocol mechanisms to meet its Kyoto Protocol target. Lithuania has hosted several JI projects, and has not participated in the CDM.

118. Lithuania has implemented a broad set of PaMs to reduce GHG emissions in all sectors. The EU ETS sets an EU-wide cap for installations included in the EU ETS (mainly large point sources such as power plants and industrial facilities). The Party's other main PaMs, defined in the different national strategies, are related to the enhancement of the use

of RES, an increase in energy efficiency, a reduction in the use of nitrates, the minimization of landfilled biodegradable and municipal waste, and an increase in the forest area. Economic incentives for emissions reduction are provided by the EU structural funds for 2007–2013, the Special Programme for Climate Change, the Programme of Modernization of Multi-apartment Buildings and feed-in tariffs. The most important individual measures with regard to the estimated mitigation effect in 2020 are the collection and use of methane from landfills, afforestation of low fertility soils and JI projects in chemical industry.

119. Lithuania is a non-Annex II Party and is therefore not obliged to adopt measures and fulfil obligations as defined in Article 4, paragraphs 3–5, of the Convention. However, its NC6 did include some relevant information on the provision of financial resources and technology transfer. The ERT commends Lithuania for the information provided.

120. Lithuania reported in its NC6 that in the twenty-first century, air temperature is projected to rise (by 4 to 8 °C in the cold period of the year) and precipitation is projected to increase in the cold period of the year but to strongly decrease in the warm period. Lithuania reported that the Inter-institutional Action Plan (see para. 30 above) sets out the framework for national climate change adaptation. The Party informed the ERT during the review that work is under way to select the most cost-efficient adaptation measures for the transport, energy, territory planning, waste, industry, agriculture, fisheries, forestry, tourism and health sectors.

121. Lithuania has increased its funding for research. For example, the government took a decision to invest 10 per cent of the total EU assistance through structural funds for 2007–2013 in research. Lithuania is involved in a number of international research projects, including projects on climate modelling, monitoring and climate change impacts. In its NC6, Lithuania provided concise information on its GCOS activities, and further information provided during the review improved transparency.

122. Environmental education in Lithuania is incorporated into the educational programmes of primary and secondary schools. Climate change education is also incorporated into the higher-level education system. Compared with the NC5, the Party provided more extensive information on the roles and involvement of the public and non-governmental organizations in framing climate change policy and awareness-raising as well as on funds for programmes on public environmental awareness. The NGOs organize events related to public education, collaboration and sharing of experience related to climate change; participate in the development of national and international legislation; prepare and issue publications about climate change; and participate in projects related to climate change awareness-raising.

123. 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 2013 annual submission was not fully transparent. During the review, Lithuania provided additional information.

124. In the course of the review, the ERT formulated several recommendations relating to the completeness and transparency of Lithuania's reporting under the Convention and its Kyoto Protocol. The key recommendations[12] are that Lithuania:

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

(i) The name and contact information for the national entity and its designated representative with overall responsibility for the national inventory of Lithuania;

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

(ii) The name and contact information for the registry administrator designated by the Party to maintain the national registry;

(iii) The total effect of PaMs by gas;

(iv) The steps Lithuania has taken to promote and/or implement any decisions by ICAO and IMO;

(v) Complete information on the outline of the action taken to implement Article 4, paragraph 1(e), of the Convention with regard to adaptation;

(vi) Lithuania's actions taken to support research and systematic observation related capacity-building activities in developing countries;

(b) Improve the transparency of its reporting by including in the next NC the following information:

(i) More detailed information on how Lithuania believes its PaMs are modifying longer-term trends in anthropogenic GHG emissions;

(ii) More detailed information on how the reported activities contribute to the minimization of adverse effects, including the adverse effects of climate change and effects on international trade and social, environmental and economic impacts, on other Parties, especially developing country Parties.

V. Questions of implementation

125. During the review, the ERT assessed the NC6, 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, transparency and adherence to the reporting guidelines on NCs. 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>.

"Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention". Annex to decision 23/CP.19. Available at <http://unfccc.int/resource/docs/2013/cop19/eng/10a02.pdf#page=20>.

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/IRR/2007/LTU. Report of the review of the initial report of Lithuania. Available at <http://unfccc.int/resource/docs/2007/irr/ltu.pdf>.

FCCC/IDR.5/LTU. Report of the in-depth review of the fifth national communication of Lithuania. Available at <http://unfccc.int/resource/docs/2011/idr/ltu05.pdf>.

Sixth national communication of Lithuania. Available at <https://unfccc.int/files/national_reports/annex_i_natcom/submitted_natcom/application/pdf/lithuania_6_nc_1br_unfccc_v_0.1%5B1%5D.pdf>.

2013 GHG inventory submission of Lithuania. Available at <https://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/7383.php>.

2014 GHG inventory submission of Lithuania. Available at <https://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/8108.php>.

B. Additional information provided by the Party

Responses to questions during the review were received from Ms. Dovile Vaitkute (Climate Change Policy Division), including additional material on updated policies and measures, greenhouse gas projections, the national registry and recent climate policy developments in Lithuania. The following documents[1] were also provided by Lithuania:

Ministry of Foreign Affairs of the Republic of Lithuania. 2011. *Costs of implementing Lithuanian commitments in case of the EU's move to 30% reduction of greenhouse gases emissions. Summary.*

Seimas of the Republic of Lithuania. 2012. *National Strategy for Climate Change Management Policy*.

[1] Reproduced as received from the Party.