



**Framework Convention on  
Climate Change**

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**Report of the in-depth review of the fifth national  
communication of the Netherlands**

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

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## I. Introduction and summary

### A. Introduction

1. For the Netherlands the Convention entered into force on 21 March 1994 and the Kyoto Protocol on 16 February 2005. Within the burden-sharing agreement of the European Union (EU) for meeting commitments under the Kyoto Protocol, the Netherlands committed itself to reducing its greenhouse gas (GHG) emissions by 6 per cent compared with the base year<sup>1</sup> level during the first commitment period from 2008 to 2012.

2. This report covers the in-country in-depth review (IDR) of the fifth national communication (NC5) of the Netherlands, coordinated by the UNFCCC secretariat, in accordance with the guidelines for review under Article 8 of the Kyoto Protocol (decision 22/CMP.1). The review took place from 28 March to 2 April 2011 in The Hague, the Netherlands, and was conducted by the following team of nominated experts from the UNFCCC roster of experts: Ms. Patricia Grobben (Belgium), Mr. Yuki Hoshino (Japan), Mr. Marcelo Rocha (Brazil) and Mr. Vute Wangwacharakul (Thailand). Mr. Hoshino and Mr. Rocha were the lead reviewers. The review was coordinated by Mr. Roman Payo (UNFCCC secretariat).

3. During the IDR, the expert review team (ERT) examined each section of the NC5. The ERT also evaluated the supplementary information provided by the Netherlands as a part of the NC5 in accordance with Article 7, paragraph 2, of the Kyoto Protocol. In addition, the ERT reviewed the information on the minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol, which was provided by the Netherlands in its 2011 annual submission under Article 7, paragraph 1, of the Kyoto Protocol.

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

### B. Summary

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

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<sup>1</sup> "Base year" refers to the base year under the Kyoto Protocol, which is 1990 for carbon dioxide, methane and nitrous oxide, and 1995 for perfluorocarbons, hydrofluorocarbons and sulphur hexafluoride. The base year emissions include emissions from sectors/source categories listed in Annex A to the Kyoto Protocol.

<sup>2</sup> Decision 15/CMP.1, annex, chapter II.

<sup>3</sup> FCCC/IDR.4/NLD.

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

**1. Completeness**

7. The NC5 covers all sections required by the UNFCCC reporting guidelines, almost all of the mandatory information required by the UNFCCC reporting guidelines and all supplementary information under Article 7, paragraph 2, of the Kyoto Protocol. The NC5 does not include some information required by the guidelines on projections (see paras. 68 and 82 below) and the 2011 annual submission does not include some required information on the minimization of adverse impacts (see para. 110 below). The ERT recommends that the Netherlands enhance the completeness of its reporting by providing this information in its next national communication or annual submission, as applicable.

**2. Transparency**

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

9. In the course of the review, the ERT formulated a number of recommendations that could help the Netherlands to further increase the transparency of its reporting with regard to national circumstances (see para. 14 below), projections and total effects of policies and measures (PaMs) (see paras. 68, 71 and 82 below), information on supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol (see para. 86 below) and financial resources and transfer of technology (see para. 102 below).

**3. Timeliness**

10. The NC5 was submitted on 19 December 2009, before the deadline of 1 January 2010 mandated by decision 10/CP.13.

**II. Technical assessment of the reviewed elements**

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

11. In its NC5, the Netherlands has concisely described its national circumstances and has elaborated on the framework legislations and key climate policy documents. The NC5 provides a reference to the description of the national system included in the national inventory report of the Party's 2009 annual submission. Further technical assessment of the institutional and legislative arrangements for the coordination and implementation of PaMs is provided in chapter II.B.1 below.

**1. National circumstances**

12. In its NC5, the Netherlands has provided: a description of its national circumstances; information on how these national circumstances affect its GHG emissions and removals; and information on how changes in these national circumstances affect its GHG emissions

and removals over time. Information is provided on the government structure, population, geography, climate, economy and relevant economic sectors. The ERT noted that the main drivers that define the emission profile and trends in the Netherlands include trends in gross domestic product (GDP), mobility, energy consumption and waste production. During the review, the Netherlands further explained some of the drivers. To improve transparency, the ERT encourages the Netherlands to report in more detail on how other drivers, such as the industrial output and structure, as well as building stock and urban structure, have influenced the emission profile and trends in the country. Table 1 illustrates the national circumstances of the Netherlands by providing some indicators relevant to GHG emissions and removals.

Table 1  
**Indicators relevant to greenhouse gas emissions and removals for the Netherlands**

	1990	1995	2000	2005	2009	Change 1990– 2000 (%)	Change 2000– 2009 (%)	Change 1990– 2009 (%)
Population (million)	15.0	15.5	15.9	16.3	16.6	6.5	4.0	10.8
GDP (2000 USD billion using PPP)	342.9	384.0	468.3	500.0	531.0	36.6	13.4	54.9
TPES (Mtoe)	65.7	70.7	73.2	78.8	77.2	11.5	5.5	17.6
GDP per capita (2000 USD thousand using PPP)	22.9	24.8	29.4	30.6	32.1	28.3	9.0	39.8
TPES per capita (toe)	4.39	4.57	4.60	4.83	4.66	4.7	1.4	6.2
GHG emissions without LULUCF (Mt CO <sub>2</sub> eq)	211.9	223.2	213.2	211.1	198.9	0.6	-6.7	-6.1
GHG emissions with LULUCF (Mt CO <sub>2</sub> eq)	214.5	225.8	215.7	213.8	201.3	0.6	-6.7	-6.2
CO <sub>2</sub> emissions per capita (t)	10.7	11.0	10.7	10.8	10.3	0.2	-3.9	-3.7
CO <sub>2</sub> emissions per GDP unit (kg per 2000 USD using PPP)	0.46	0.44	0.36	0.35	0.32	-21.9	-11.9	-31.2
GHG emissions per capita (t CO <sub>2</sub> eq)	14.2	14.4	13.4	12.9	12.0	-5.5	-10.3	-15.3
GHG emissions per GDP unit (kg CO <sub>2</sub> eq per 2000 USD using PPP)	0.62	0.58	0.46	0.42	0.37	-26.3	-17.7	-39.4

*Sources:* (1) GHG emissions data: The Netherlands' 2011 GHG inventory submission, submitted on 15 April 2011; (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.

13. The Netherlands is a constitutional monarchy with two Chambers of Parliament, the first elected by the provinces and the second elected directly by the citizens. The territory is distributed into 12 provinces and 441 municipalities. The NC5 reports that the overall responsibility for climate change policymaking lies within the Ministry of Housing, Spatial

Planning and the Environment (VROM) and that a number of national institutions are involved in the implementation of this policy. Implementation of the Kyoto Protocol is underpinned by the National Climate Policy Implementation Plan (NCPIP), issued in 1999 (domestic measures) and 2000 (use of Kyoto units), while the Clean and Efficient Programme (CEP), issued in 2007, sets three policy targets for 2020: reducing GHG emissions by 30 per cent between 1990 and 2020, increasing energy efficiency by 2 per cent annually between 2011 and 2020, and increasing the share of renewable energy sources (RES) in the energy mix from 2 per cent in 2007 to 20 per cent by 2020. Further legislative arrangements and administrative procedures, including those for the national system and the national registry, are presented in chapters II.A.2, II.A.3 and II.B below.

14. During the review, the Netherlands reported that after the change of its Government in 2010 the CEP was withdrawn, although most of its PaMs continued, as their legal basis was in the Environmental Management Act. In addition, the new Government changed the structure of several ministries with responsibility for climate policy (see para. 37 below). Further, the Netherlands explained the voluntary agreements and covenants between the Government and different private-sector actors, regions and municipalities, the process of establishing these agreements and the role of such agreements vis-à-vis regulations to support the national climate policy. To increase transparency, the ERT recommends that the Netherlands explain in more detail the voluntary agreements and the changes in climate change policymaking and responsibilities in its next national communication.

15. The NC5 provides a summary of the Party's GHG emission trends for the period 1990–2007. This information is consistent with the Party's 2009 annual submission. Summary tables, including trend tables for emissions in carbon dioxide equivalent (CO<sub>2</sub> eq) (given in the common reporting format), are also provided in an annex to the NC5. During the review, the ERT noted the Party's recently submitted 2011 annual submission and it has reflected the related findings in this report.

16. Total GHG emissions excluding emissions and removals from land use, land-use change and forestry (LULUCF) decreased by 6.1 per cent between 1990 and 2009 (the decrease is 6.2 per cent when emissions and removals from LULUCF are included). The decrease is mainly the result of the decreases in methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O) emissions, which decreased by 33.7 per cent and 51.7 per cent, respectively, over that period, while carbon dioxide (CO<sub>2</sub>) emissions increased by 6.6 per cent. Table 2 provides an overview of GHG emissions by sector in the Netherlands from 1990 to 2009.

17. The ERT noted that the Netherlands is decoupling its economic growth from its GHG emissions: between 1990 and 2009, GDP increased by 55 per cent, while total GHG emissions<sup>4</sup> decreased by 6 per cent. The decrease in emissions was driven by the decrease in emissions of non-CO<sub>2</sub> gases, which decreased by 23.5 Mt CO<sub>2</sub> eq (44 per cent), while CO<sub>2</sub> emissions increased by 10.6 Mt CO<sub>2</sub> eq (6.6 per cent). The ERT also noted the decrease in GHG emissions from the industrial processes and waste sectors, which suggests the effectiveness of PaMs in those sectors (see paras. 59 and 62 below).

18. Total GHG emissions peaked in 1996 (at 9.2 per cent above the 1990 level). CO<sub>2</sub> emissions increased from 1990 to 1996 (up to 11.6 per cent above the 1990 level), declined and then increased again up to their absolute peak in 2004 (at 13.7 per cent above the 1990 level), from which they declined and then began increasing again until they dropped in 2009. CH<sub>4</sub> emissions declined steadily from 1990 until 2006 (down to 34.2 per cent below the 1990 level) and have remained around that level ever since. N<sub>2</sub>O emissions peaked in 1993 (at 3.9 per cent above the 1990 level) and then declined steadily until 2003 (down to 22.8 per cent below the 1990 level), stayed around that level until 2006, and then declined

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<sup>4</sup> In this report, "total GHG emissions" refers to the aggregated national GHG emissions expressed in terms of CO<sub>2</sub> eq excluding LULUCF, unless otherwise specified.

abruptly in 2007 and 2008 to reach 50.6 per cent below the 1990 level. Emissions of fluorinated gases (F-gases) accounted for about 3.3 per cent of total GHG emissions in 1990 and 1.1 per cent in 2009. Trends in total GHG emissions were mostly underpinned by GHG emission trends in the energy sector, the only sector from which emissions have increased. Analysis of drivers for GHG emission trends in each sector is provided in chapter II.B below. The ERT noted the decrease in total GHG emissions between 2008 and 2009, which was mainly as a result of the global downturn and the associated decrease in economic activity in the Netherlands.

Table 2  
**Greenhouse gas emissions by sector in the Netherlands, 1990–2009**

Sector	GHG emissions (Mt CO <sub>2</sub> eq)						Change (%)		Shares <sup>a</sup> by sector (%)	
	1990	1995	2000	2005	2008	2009	1990–2009	2008–2009	1990	2009
	1. Energy	154.0	165.9	164.9	171.2	171.8	166.7	8.3	–3.0	72.7
A1. Energy industries	52.7	61.7	63.9	67.7	65.6	64.6	22.6	–1.5	24.9	32.5
A2. Manufacturing industries and construction	33.1	29.0	27.5	27.5	27.6	25.0	–24.4	–9.4	15.6	12.6
A3. Transport	26.4	29.8	33.0	35.2	36.0	34.6	30.7	–4.0	12.5	17.4
A4.–A5. Other	38.9	42.9	39.1	38.4	40.1	40.2	3.4	0.1	18.3	20.2
B. Fugitive emissions	2.9	2.6	1.5	2.5	2.5	2.4	–17.2	–6.2	1.3	1.2
2. Industrial processes	22.2	23.6	20.3	16.0	10.2	9.9	–55.5	–3.1	10.5	5.0
3. Solvent and other product use	0.5	0.4	0.3	0.2	0.2	0.2	–63.9	–5.4	0.3	0.1
4. Agriculture	22.4	22.0	18.8	16.9	16.7	16.7	–25.2	0.2	10.6	8.4
5. LULUCF	2.7	2.5	2.6	2.7	2.7	2.5	–8.1	–7.2	1.3	1.2
6. Waste	12.8	11.3	8.9	6.8	5.7	5.3	–58.2	–5.9	6.0	2.7
<b>GHG total with LULUCF</b>	<b>214.5</b>	<b>225.8</b>	<b>215.7</b>	<b>213.8</b>	<b>207.3</b>	<b>201.3</b>	<b>–6.2</b>	<b>–2.9</b>	<b>NA</b>	<b>NA</b>
<b>GHG total without LULUCF</b>	<b>211.9</b>	<b>223.2</b>	<b>213.2</b>	<b>211.1</b>	<b>204.6</b>	<b>198.9</b>	<b>–6.1</b>	<b>–2.8</b>	<b>100.0</b>	<b>100.0</b>

Source: The Netherlands' 2011 GHG inventory submission, submitted on 15 April 2011.

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

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

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

## 2. National system

19. In accordance with decision 15/CMP.1, the Netherlands has provided in its NC5 a description of how its national system is performing the general and specific functions defined in the guidelines for national systems under Article 5, paragraph 1 (decision 19/CMP.1). The NC5 also provides a reference to the Party's 2009 annual submission, which contains a more detailed description of the national system. The description includes all the elements as required in decision 15/CMP.1.

20. The NC5 describes the national legislative arrangements and administrative procedures that seek to ensure that the implementation of activities under Article 3, paragraph 3, of the Kyoto Protocol<sup>5</sup> also contributes to the conservation of biodiversity and the sustainable use of natural resources. Specifically, the Biodiversity Policy Programme (2008–2011), the Spatial Planning Act, the Nature Protection Act and the Flora and Fauna Act contribute to preventing deforestation and establish compensation measures for when deforestation is unavoidable.

21. During the review, the Netherlands provided additional information on the national system, elaborating on the capacity of the national system, institutional and legislative arrangements and administrative procedures for GHG inventory planning, preparation and management, and quality assurance/quality control (QA/QC).

22. The ERT took note of the report of the individual review of the 2010 annual submission of the Netherlands.<sup>6</sup> During the review, the ERT learned that the Netherlands has made improvements to its QA/QC processes, such as including a consistency check with data from the European Union emissions trading scheme (EU ETS). The ERT concluded that the national system continued to perform its required functions as set out in decision 19/CMP.1.

## 3. National registry

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

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

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

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<sup>5</sup> The Netherlands has not elected any activity under Article 3, paragraph 4, of the Kyoto Protocol.

<sup>6</sup> FCCC/ARR/2010/NLD.

26. The ERT noted that the national registry experienced unsuccessful attempts to breach its security in early 2011. During the review, the Netherlands informed the ERT that additional higher-level security measures were being implemented. The ERT recommends that the Netherlands pursue the implementation of these security measures to prevent and resolve unauthorized manipulations in accordance with paragraph 115(e) of the annex to decision 22/CMP.1.

27. The ERT concluded that the Netherlands' national registry continues to perform the functions set out in the annex to decision 13/CMP.1 and the annex to decision 5/CMP.1, and continues to adhere to the technical standards for data exchange between registry systems in accordance with decisions 16/CP.10 and 12/CMP.1.

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

28. As required by the UNFCCC reporting guidelines, the Netherlands has provided in its NC5 complete 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. Each sector has its own textual description of the principal PaMs, supplemented by summary tables on PaMs by sector and gas. The Netherlands has also provided information on how it believes its PaMs are modifying longer-term trends in anthropogenic GHG emissions and removals, consistent with the objective of the Convention.

29. However, the NC5 does not provide information on policies and practices which encourage activities that lead to higher levels of anthropogenic GHG emissions than would otherwise occur. During the review, the Netherlands provided information on some of these PaMs, such as the increase in 2011 of the speed limits for vehicles on certain roads. The ERT encourages the Netherlands to include information on such PaMs in its next national communication.

30. The ERT noted a few inconsistencies between the textual descriptions of the PaMs and the information in the summary tables: major PaMs in the transport sector (on biofuels and emission performance standards for cars) are not included in the summary table, and the estimates of the effect of the measure to reduce N<sub>2</sub>O emissions from nitric acid industry differ. The ERT encourages the Netherlands to improve the consistency of its reporting in its next national communication.

31. The ERT also noted that some PaMs that have a significant impact on GHG emissions, such as the energy tax (one of the central PaMs for energy efficiency) and the milk quota in the agriculture sector, are listed in the relevant summary table but not described in the text. To improve transparency, the ERT encourages the Netherlands to report and describe in its next national communication all PaMs that have a significant impact on GHG emissions and, for PaMs that have been thoroughly described in previous national communications, to provide a reference.

32. Regarding PaMs at the regional and local levels, the NC5 reports on climate agreements between the national Government and the associations of provinces and municipalities. Under these agreements, the provinces and municipalities take on initiatives to reduce GHG emissions, supported financially and technically by the national Government. During the review, the Netherlands reported as an example the Rotterdam Climate Initiative: Rotterdam city and port is aiming to become the first city in the world that does not emit CO<sub>2</sub> from energy, and the first step is to halve its CO<sub>2</sub> emissions by 2025 compared with the 1990 level.

33. The NCPIP is the key framework plan for the Netherlands to meet its target under the Kyoto Protocol for the 2008–2012 period. The NC5 provides a reference to the Party's third national communication, in which the NCPIP is described in detail. The ERT noted that the NC5 does not provide information on the progress made towards achieving the sectoral targets set in the NCPIP.

34. The NC5 presents quantitative estimates of the effects of individual PaMs and clusters of PaMs (owing to the difficulty of separating the impacts of individual PaMs that target the same emission source or activity) for each sector. The PaMs are grouped by sector (energy, industry, transport, agriculture, forestry, waste and built environment). The differences between this sectoral classification and the sectoral classification used in the Party's annual submission are clearly explained. The ERT noted that a quantitative estimate of the impact of the EU ETS is not provided, as its effect has been included in the reference scenario against which the effects of PaMs are estimated. Quantitative estimates of the effects of important PaMs in the transport sector, such as those related to biofuels and emission performance standards for cars, are not presented in the NC5 either. The ERT encourages the Netherlands to present quantitative estimates of the impacts of all PaMs in its next national communication. The Netherlands may wish to present also the aggregated impact of PaMs by sector, with an explanation of synergies and overlap between the effects of individual PaMs.

35. The NC5 reports on the costs of the implementation of some PaMs, in the form of amount of budget set aside for their implementation, but not for a few key PaMs in the energy sector, such as the Stimulating Renewable Energy Production scheme (SDE) and the Energy Investment Allowance (EIA). During the review, the Netherlands reported that, for 2010, EUR 1.4 billion was allocated to support RES, including the SDE and other PaMs. In addition, the Netherlands indicated that in 2010 the EIA cost the Government EUR 150 million. The ERT encourages the Netherlands to report the implementation costs of its major PaMs in its next national communication.

36. The NC5 reports on PaMs that are no longer in place, such as the Environmentally Friendly Electricity Production Programme (MEP), which has been replaced by the SDE, but the reasons for their discontinuation are not provided. Table 3 summarizes the reported information on the PaMs of the Netherlands.

## **1. Policy framework and cross-sectoral measures**

37. During the review, the Netherlands reported on the significant institutional changes in relation to climate policy that have occurred since the NC5 was submitted. The NC5 reports that the Board of the CEP is responsible for coordinating climate policies between ministries, but, during the review, the ERT was informed that the CEP was abolished in October 2010 and that the responsibilities of a few ministries have changed: the former VROM has become the Ministry of Infrastructure and the Environment, also responsible for PaMs in the transport sector and PaMs addressing non-CO<sub>2</sub> GHGs (except in the agriculture sector); the new Ministry of Economic Affairs, Agriculture and Innovation has become responsible for PaMs in the energy, industrial and agriculture sectors; and the Interior Ministry has become responsible for PaMs relating to the building stock, previously the responsibility of VROM.

38. The Environmental Management Act provides the legal basis for some important PaMs, including voluntary agreements between the national Government and industries (see paras. 46–48 and 50 below), the EU ETS and the National Waste Management Plan. The ERT noted that voluntary agreements that play a significant role in the Netherlands' climate policy are not necessarily backed by legislation.

Table 3  
**Summary of information on policies and measures**

<i>Major policies and measures</i>	<i>Examples/comments</i>
<i>Policy framework and cross-sectoral measures</i>	
<i>Policy framework</i>	
The National Climate Policy Implementation Plan (issued in 1999 and 2000)	A framework plan that includes a package of policies and measures for the Netherlands to meet its target under the Kyoto Protocol for the 2008–2012 period. Part 1, issued in 1999, deals with domestic measures, while part 2, issued in 2000, deals with the use of Kyoto units
The Clean and Efficient Programme (adopted in 2007, withdrawn in 2010)	This cross-sectoral programme set targets for 2020 for greenhouse gas (GHG) emissions, energy efficiency improvements and increasing the share of renewable energy in total energy consumption. The programme was withdrawn in 2010 and its targets modified
<i>Legislative framework</i>	
The Environmental Management Act (1993, amended in 2004)	A framework act that provides the legal basis for environmental regulations, including the European Union emissions trading scheme (EU ETS), waste management and voluntary agreements with stakeholders. The Act identifies the authorities responsible for monitoring compliance and enforcement
<i>Cross-sectoral measures</i>	
The EU ETS and Dutch national allocation plans (NAPs)	<p>The first Dutch NAP, for the period 2005–2007, allocated 86.4 Mt CO<sub>2</sub> eq/year for sources under the EU ETS. Actual emissions under the EU ETS were on average 79.0 Mt CO<sub>2</sub> eq annually, 8.6 per cent below the allocation</p> <p>The second NAP, for the period 2008–2012, allocated on average 84.3 Mt CO<sub>2</sub> eq/year. Actual annual emissions in the period 2008–2010 were on average 83.0 Mt CO<sub>2</sub> eq (1.5 per cent below the allocation)</p> <p>For the period 2013–2020, the target is a 21 per cent emission reduction compared with the 2005 level. No allocation is available yet</p>
The Reduction Programme for Non-CO <sub>2</sub> Gases (ROB) (adopted in 1998, amended in 2007)	The ROB is a subsidy and research programme to reduce emissions of non-CO <sub>2</sub> GHGs from the agriculture, industry (aluminium, semi-conductor and nitric acid production) and waste sectors and, since 2007, from the cooling sector. Its budget was EUR 1.5 million in 2007 and EUR 1.25 million in 2008 (8–10 Mt CO <sub>2</sub> eq in 2020)
<i>Policies and measures by sector</i>	
<i>Energy</i>	
The Energy Investment Allowance (EIA)	The EIA lets companies deduct the costs of energy-saving and renewable energy projects from their taxes. This scheme cost EUR 150 million in 2010
Energy tax	The energy tax is a regressive tariff tax on fossil fuel and electricity consumption for both industries and households
Stimulating Renewable Energy Production (SDE) (2008)	The SDE is a subsidy scheme for investments in renewable electricity and gas
(The EIA, energy tax, SDE and other PaMs to promote renewable energy are expected to save 11 Mt CO <sub>2</sub> eq in 2010 and 18 Mt CO <sub>2</sub> eq in 2020)	

<i>Major policies and measures</i>	<i>Examples/comments</i>
Subsidy for cogeneration	The subsidies of this programme incentivise cogeneration by lowering the investment cost for the developer (1.9 Mt CO <sub>2</sub> eq in 2010; 1.3 Mt CO <sub>2</sub> eq in 2020)
The Benchmarking Covenant (BC) and Long-term Agreements (LTAs) on energy efficiency	The BC and LTAs are voluntary agreements between the Government and companies to promote energy efficiency. Large energy consumers (of more than 0.5 PJ/year) can join the BC, while smaller consumers can join other LTAs. Companies under the BC commit to being among the most energy-efficient in the world by 2012. Companies under other LTAs develop an energy plan and implement the most profitable measures, aiming at a 2 per cent annual improvement in energy efficiency. The BC was replaced in 2009 by the LTA on energy efficiency for companies under the EU ETS (see below)
LTA on energy efficiency for companies under the EU ETS (2009)	In this voluntary agreement, each participating company develops and implements an energy efficiency plan. The implementation is verified (0.4 Mt CO <sub>2</sub> eq in 2010; 2.1 Mt CO <sub>2</sub> eq in 2020)
The Housing Act	The Housing Act establishes stricter energy standards for new residential and commercial buildings. Compared with the standards in 2005, the new standards require new residential buildings to improve energy efficiency by 25 per cent from 2011 and by 50 per cent from 2015, while new commercial buildings from 2017 will be required to improve energy efficiency by 50 per cent
Energy Investment Deduction for retrofitting existing buildings	Commercial buildings and private houses that significantly improve their energy performance qualify for tax deduction of the cost of the retrofitting measures
The More with Less Covenant for existing buildings (2008)	The target is to make 500,000 existing buildings 30 per cent more efficient between 2008 and 2011, and thereafter 300,000 existing buildings more efficient annually
	(Energy performance standards, Energy Investment Deduction and other PaMs for enhancing energy efficiency in buildings are expected to save 1 Mt CO <sub>2</sub> eq in 2010 and 2.3 Mt CO <sub>2</sub> eq in 2020)
<i>Transport</i>	
European Union (EU) emission performance standards for new passenger cars (2009)	From 2012, the emission limit for new passenger cars will be on average 130 g CO <sub>2</sub> /km
Transport Biofuels Act (2007) (EU directive 2003/30/EC)	The targets for the share of energy from biofuels in road transport fuels are 4 per cent by 2010 and 10 per cent by 2020. This share was 2.6 per cent in 2008 and 3.3 per cent in 2009
Tax breaks favourable to efficient cars (2006)	Fuel-efficient cars are exempt from both purchase tax and annual vehicle tax
The Dutch ecodriving programme (1999)	The ecodriving programme promotes more energy-efficient and safer driving and the purchase of more efficient vehicles among professional drivers and fleet owners (0.9 Mt CO <sub>2</sub> eq in 2010; 0.9 Mt CO <sub>2</sub> eq in 2020)
EU ETS: inclusion of international aviation bunkers	The GHG emissions from all international flights departing from or arriving at any EU member State from 2013 will be covered by the EU ETS

<i>Major policies and measures</i>	<i>Examples/comments</i>
<i>Industrial processes</i>	
N <sub>2</sub> O catalyser in nitric acid production (part of the ROB programme)	This subprogramme promotes the introduction of a catalyser to abate N <sub>2</sub> O emissions in nitric acid plants (4.7 Mt CO <sub>2</sub> eq in 2010; 5.2 Mt CO <sub>2</sub> eq in 2020)
<i>Agriculture</i>	
The Clean and Efficient Agriculture Covenant (2008)	This voluntary agreement between the national Government and agricultural companies sets a target to reduce CO <sub>2</sub> and non-CO <sub>2</sub> emissions by 3.5–4.5 Mt CO <sub>2</sub> eq and 4–6 Mt CO <sub>2</sub> eq, respectively, by 2020 compared with the 1990 level
Ammonia and manure policy	These regulations establish standards and best practices for manure and ammonia management (0.6 Mt CO <sub>2</sub> eq in 2010)
Milk quota	This EU regulation establishes for each EU member State an annual cap on the quantity of milk produced. In the Netherlands, the regulation has resulted in a lower number of dairy cattle (0.3 Mt CO <sub>2</sub> eq in 2010)
Greenhouses as Energy Sources programme	This programme encourages innovations in greenhouses in relation to: using and producing renewable energy; energy efficiency; and using purified waste CO <sub>2</sub> from other industries
<i>Waste</i>	
The National Waste Management Plan (2009–2021)	The waste plan, under the Environmental Management Act, reduces the amount of waste sent to landfill or incinerators by reducing the rate of generation of waste and promoting the recycling and reusing of waste (4 Mt CO <sub>2</sub> eq in 2010; 6 Mt CO <sub>2</sub> eq in 2020)

*Note:* The GHG reduction estimates, given for some measures (in parentheses), are reductions in CO<sub>2</sub> or CO<sub>2</sub> eq for the year indicated, compared with the reference scenario that begins in 2005.

39. The NC5 reports that the CEP set policy targets for GHG emissions, energy efficiency and RES for 2020 (see para. 13 above). During the review, the Netherlands reported that the targets of the CEP had been withdrawn and that new targets for 2020 had been set in line with the EU targets for 2020 under the effort-sharing decision (decision 406/2009/EC): for GHG emissions, a 21 per cent decrease compared with the 2005 level for sources covered by the EU ETS (ETS sector) and a 16 per cent decrease for sources not covered by the EU ETS (non-ETS sector); and for RES, a 14 per cent share of RES in total energy consumption. However, most of the PaMs of the CEP are still in place, except for the important new policy on vehicle taxation based on kilometres driven. During the review, the Netherlands provided information on the latest assessment, which shows that the PaMs in place are expected to be sufficient to achieve the GHG emission target for 2020 for the non-ETS sector. The ERT noted that the new targets adopted are less ambitious, in the sense of aiming at a higher maximum level of GHG emissions, than the targets in the CEP.

40. The EU ETS plays a crucial role in curbing emissions from the ETS sector in the Netherlands (see table 3). Emissions from the ETS sector account for around 40 per cent of the national emissions. The Netherlands considers the EU ETS to be the most important measure to reduce emissions from the ETS sector, but the NC5 does not provide an estimate of the effect of the EU ETS, as its effect is incorporated in the reference scenario. In addition to the EU ETS, the NC5 identifies other cross-sectoral PaMs, such as the Reduction Programme for Non-CO<sub>2</sub> Gases (ROB) (see para. 58 below), the energy tax and EIA (see paras. 45 and 49 below) and the SDE (see paras. 35 above and 43 below).

## 2. Policies and measures in the energy sector

41. The energy sector is the largest contributor to the Netherlands' total GHG emissions (contributing 84 per cent in 2009 and 73 per cent in 1990). Between 1990 and 2009, GHG emissions from the energy sector increased by 8.3 per cent (12.8 Mt CO<sub>2</sub> eq), driven mainly by notable increases in emissions from transport (by 31 per cent, or 8.1 Mt CO<sub>2</sub> eq) and from energy industries (by 23 per cent, or 11.9 Mt CO<sub>2</sub> eq) and despite the 24 per cent decrease (8.1 Mt CO<sub>2</sub> eq) in GHG emissions from the manufacturing industries and construction sector.

42. **Energy supply.** Total primary energy supply increased by 18 per cent between 1990 and 2009 (a 6.2 per cent increase in per capita terms), driven mainly by growing demand for heat, power and transport services. During the same period, the Netherlands' GDP grew by 55 per cent (40 per cent in per capita terms), resulting in a 31 per cent decrease in CO<sub>2</sub> emissions per GDP unit. GHG emissions from energy industries increased by 23 per cent from 1990 to 2009, accounting for 32 per cent of the total emissions in 2009, driven by the strong growth of the public power and heat generation sector. Natural gas and waste increased their shares in the fuel mix of power plants, while coal's share decreased. As a result, the emission factor of the electricity produced dropped from 665 g CO<sub>2</sub>/kWh in 1990 to 546 g CO<sub>2</sub>/kWh in 2008. Overall, in 2009, natural gas accounted for about 45 per cent of the total primary energy supply, followed by liquid fuels (38 per cent) and coal (10 per cent). The central PaMs to reduce emissions from energy supply are encouraging the use of RES and the market penetration of combined heat and power (CHP).

43. **RES.** The share of RES (mostly biomass (wood pellets) and wind power) in the total primary energy supply increased from less than 1 per cent in 1990 to 4 per cent in 2009. The NC5 reports that the central instruments to support and stimulate investment in RES are subsidy programmes such as the SDE and the MEP, although renewable heat is not eligible under the SDE. Together, the SDE and the MEP have a budget of nearly EUR 1.4 billion annually. The target to raise the share of RES in total energy consumption to 14 per cent by 2020 (see para. 39 above) is expected to be met by increases in wind and biomass use. During the review, the Netherlands reported that the SDE+, a new scheme for financing RES, including heat, is expected to be launched in 2013, with a EUR 100 million budget for that year, which will be gradually increased, and is expected to displace the SEP and the MEP.

44. **CHP.** Together with RES, CHP is the other important pillar to reduce GHG emissions and improve energy efficiency in the supply of energy, especially for the horticulture subsector. In 2009, CHP plants produced a third of the total electricity of the Netherlands (40 per cent in 1995; 37 per cent in 2000). The ERT noted that the rapid growth of CHP in the 1990s stopped after the liberalization of the gas and electricity markets, and that growth in CHP is expected mainly in the horticulture subsector, to cope with the subsector's growing demand for heat. Until 2006, CHP was encouraged in the horticulture subsector by the subsidies of the MEP, now discontinued.

45. **Energy efficiency.** The NC5 reports on the target established in the CEP. However, during the review, the Netherlands indicated that all targets of the CEP were withdrawn in 2010 and that it does not have an economy-wide energy efficiency target. The energy tax is levied on the fossil fuels and electricity consumed by industries and households. However, the ERT noted that the energy prices for households and industry are similar to the average energy prices of the EU 15.<sup>7</sup>

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<sup>7</sup> Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden and United Kingdom of Great Britain and Northern Ireland.

46. **Industrial sector.** The share of emissions from energy use in the industrial and construction sector in the Party's total GHG emissions decreased from 16 per cent in 1990 to 13 per cent in 2009, as GHG emissions from energy use in this sector decreased by 24 per cent during the same period. The key PaMs in this sector are the EU ETS, voluntary agreements with industrial companies, such as the Benchmarking Covenant (BC) and Long-term Agreements (LTAs), and tax incentives. Large industrial energy consumers (consuming more than 0.5 PJ/year) are covered by the BC, while other industrial consumers are covered by other LTAs.

47. The NC5 reports that under the BC companies are committed to achieving or maintaining by 2012 a position among the most energy-efficient companies in their sector worldwide, while the Government agrees not to impose energy efficiency regulations. During the review, the Netherlands reported that the BC was replaced in early 2009 by the LTA on energy efficiency for companies under the EU ETS (LEE), and the energy efficiency goal to be achieved by 2012 withdrawn. The installations under the EU ETS that join the LEE develop an energy efficiency plan, with support from the Government if required, every four years and implement all the measures with an internal rate of return of at least 15 per cent. The ERT noted that for companies under the EU ETS the main policy has gradually shifted from voluntary agreements on energy efficiency to an absolute limit on their GHG emissions.

48. Installations not covered by the EU ETS may join other LTAs on energy efficiency. The objective is a 30 per cent improvement in energy efficiency between 2005 and 2020. Under these LTAs, companies implement systematic energy management throughout the supply chain and incorporate RES, in addition to developing an energy efficiency plan that evaluates the potential energy efficiency measures. These companies report yearly on their energy performance compared with the original plan. Companies (both covered and not covered by the EU ETS) that do not join an LTA are required under their operation permits to implement all energy-saving measures with an internal rate of return of at least 15 per cent after tax. In addition, they face more detailed permitting procedures. EUR 14 million has been allocated to increase the capacity of the authorities giving permits and monitoring compliance.

49. The EIA provides tax incentives, as it allows companies to deduct 44 per cent of the purchase or operation costs of energy-saving equipment from their profits when calculating taxes. The total cost of this scheme in 2010 for the Government is estimated at EUR 150 million.

50. **Residential and commercial sectors.** Emissions from these sectors accounted for 15 per cent of the Party's total GHG emissions in 2009, with remarkably different trends: GHG emissions from the commercial sector increased by 36 per cent from 1990 to 2009, in line with the sector's growth in employees, whereas GHG emissions from the residential sector decreased by 8 per cent during the same period, despite the increase in the number of households. Regulations, specifically the Housing Act, play a significant role for new buildings (see table 3), while financial incentives and voluntary agreements address existing buildings (see para. 51 below). During the review, the Netherlands explained that the decrease in GHG emissions from the residential sector is mainly the result of improving the insulation of new and existing buildings. The ERT encourages the Netherlands to present the lessons learned from the success in decreasing these emissions in its next national communication.

51. The key measures to encourage the retrofitting of existing buildings are financial incentives, such as the Energy Investment Deduction, which allows commercial buildings to deduct the costs incurred for improving energy efficiency from their taxable revenue, and voluntary agreements with the construction sector (the More with Less Covenant). During the review, the Netherlands reported on Block by Block, a new initiative to retrofit existing

households in a more cost-effective way by retrofitting all households in the same block at the same time.

52. The promotion of more energy-efficient appliances in residential and commercial buildings is another way to curb energy consumption. The EU ecodesign directive (directive 2009/125/EC) is the most important measure.

53. **Agriculture sector.** The NC5 reports that the horticulture subsector is a source of rapidly increasing GHG emissions, owing to the increasing number of dedicated CHP plants. During the review, the Netherlands reported that in 2009 the CHP plants in the horticulture subsector supplied nearly 10 per cent of the total electricity consumption of the Netherlands, emitting 7 Mt CO<sub>2</sub> eq. The Netherlands strives to curb the emissions from this subsector by promoting energy conservation measures and RES. Under the Clean and Efficient Agriculture Covenant, the horticulture subsector committed to a 57 per cent improvement in energy efficiency compared with the 1990 level by 2020 (by 2009 there had already been a 53 per cent improvement). During the review, the Netherlands reported that setting a ceiling on the emissions from the horticulture subsector from 2013 was under consideration. The current Greenhouses as Energy Sources programme promotes using and producing renewable energy, increasing energy efficiency and using purified waste CO<sub>2</sub> from other industries.

54. **Transport sector.** Emissions from the transport sector increased notably (by 31 per cent) from 1990 to 2009, as a result of the increase in both freight and passenger road transport. Emissions from the transport sector accounted for 17 per cent of the Party's total GHG emissions in 2009 and 12 per cent in 1990. Regulations, financial incentive schemes and increasing awareness (see para. 55 below) address emissions from transport. The ERT noted that, in its NC5, the Netherlands has not provided information on the effects of important PaMs such as the Transport Biofuels Act and the EU emission performance standards for new cars (regulation 443/2009/EC). The ERT encourages the Netherlands to include such information in its next national communication.

55. The key PaMs in the transport sector include fiscal policies (both purchase tax and, for leased cars, income tax) favourable to efficient cars, the EU CO<sub>2</sub> emission performance standards for new passenger cars and the Transport Biofuels Act. In addition, the Netherlands continues to encourage the use of non-motor modes of transportation, such as cycling and walking. During the review, the Netherlands reported that, as a result of the taxation incentives, average CO<sub>2</sub> emissions of new passenger cars decreased by nearly 15 per cent between 2007 and 2010, and that passenger cars labelled as energy-efficient represent nearly one third of the total annual sales of new cars. The Netherlands has been promoting more energy-efficient and safer ways of driving through the ecodriving programme. This programme has resulted in reductions in CO<sub>2</sub> emissions at a cost of EUR 9/t CO<sub>2</sub>. The NC5 describes a vehicle tax based on the number of kilometres driven per year, a highly innovative and replicable measure; however, during the review, the ERT was informed that it was never implemented.

56. Between 1990 and 2009, GHG emissions from international aviation fuels rose by 125 per cent (from 4.6 Mt CO<sub>2</sub> eq to 10.2 Mt CO<sub>2</sub> eq) and emissions from international marine fuels by 33 per cent (from 34.5 Mt CO<sub>2</sub> eq to 45.9 Mt CO<sub>2</sub> eq), reflecting the international hub-seaport and hub-airport position of the Netherlands. In its NC5, the Netherlands has provided information on its engagement with the International Civil Aviation Organization (ICAO) and the International Maritime Organization. The Netherlands supported the inclusion of aviation under the EU ETS, taking into account the agreements and regulations under ICAO. In addition, the NC5 reports that the flight tax for international passengers introduced in July 2008 was repealed one year later. To enhance transparency, the ERT encourages the Netherlands to report on the PaMs influencing international transport in the transport section of its next national communication.

### 3. Policies and measures in other sectors

57. Between 1990 and 2009, the aggregated GHG emissions from industrial processes (including solvent and other product use), agriculture and waste decreased by 44 per cent (25.7 Mt CO<sub>2</sub> eq), driven by considerable emission decreases in the industrial processes (12.7 Mt CO<sub>2</sub> eq), agriculture (5.6 Mt CO<sub>2</sub> eq) and waste sectors (7.4 Mt CO<sub>2</sub> eq) (see table 2).

58. The ROB is a cross-sectoral PaM that focuses on non-CO<sub>2</sub> GHGs, which subsidized more than 170 projects between 1998 and 2010, including research and development, feasibility studies, demonstration projects and market introduction. The ROB promotes cooperation and technological innovation among the national and local governments, private companies, research institutions and other stakeholders. The NC5 reports that the CEP set a target for reducing non-CO<sub>2</sub> GHG emissions by 25–27 Mt CO<sub>2</sub> eq by 2020 from around 35 Mt CO<sub>2</sub> eq in 2005. During the review, the Netherlands reported that the new target for the maximum level of emissions of non-CO<sub>2</sub> gases in 2020 is 29 Mt CO<sub>2</sub> eq (a 16 per cent reduction in emissions from the 2005 level). The ERT noted that the new target for the maximum level of emissions of non-CO<sub>2</sub> gases (29 Mt CO<sub>2</sub> eq in 2020) is considerably less ambitious than the previous target (10–12 Mt CO<sub>2</sub> eq).

59. **Industrial processes.** Between 1990 and 2009, N<sub>2</sub>O emissions from the industrial processes sector strongly decreased, by 85 per cent (6.0 Mt CO<sub>2</sub> eq), driven by the decrease in N<sub>2</sub>O emissions from nitric acid production and in hydrofluorocarbon-23 (HFC-23) emissions from the production of hydrochlorofluorocarbon-22. The key PaMs in the sector are the introduction of an N<sub>2</sub>O catalyser in nitric acid plants (estimated to avoid 4.7 Mt CO<sub>2</sub> eq in 2010 and 5.2 Mt CO<sub>2</sub> eq in 2020) and the installation of a thermal afterburner in the only plant that emits HFC-23. The 3.8 Mt CO<sub>2</sub> eq reduction between 1990 and 2009 in emissions from metal production (1.5 Mt CO<sub>2</sub> eq reduction in emissions from iron and steel production and 2.2 Mt CO<sub>2</sub> eq reduction of perfluorocarbon (PFC) emissions from aluminium production) also contributed to the decrease in emissions from this sector. However, the ERT noted the 1.5 Mt CO<sub>2</sub> eq increase in GHG emissions from refrigeration and air conditioning. The aggregated emissions of F-gases (PFCs, hydrofluorocarbons (HFCs) and sulphur hexafluoride (SF<sub>6</sub>)) accounted for 1.1 per cent of the Party's total GHG emissions in 2009 and 3.3 per cent in 1990. Emissions of F-gases (6.9 Mt CO<sub>2</sub> eq in 1990) peaked in 1998 at 11.5 Mt CO<sub>2</sub> eq, decreased until 2003 (to 2.4 Mt CO<sub>2</sub> eq) and have remained stable ever since.

60. **Agriculture.** Between 1990 and 2009, GHG emissions from the agriculture sector decreased by 25 per cent (5.6 Mt CO<sub>2</sub> eq), driven mainly by the 4.3 Mt CO<sub>2</sub> eq decrease in N<sub>2</sub>O emissions from agricultural soils (41 per cent below the 1990 level) and the 1.0 Mt CO<sub>2</sub> eq decrease in CH<sub>4</sub> emissions from enteric fermentation (14 per cent below the 1990 level). Regulations on nitrates, based partly on the EU nitrates directive (directive 91/676/EEC), have, as a side effect, reduced N<sub>2</sub>O emissions from agricultural soils, while the decrease in the number of livestock, coupled with production efficiency improvements, has reduced CH<sub>4</sub> emissions from enteric fermentation. Under the Clean and Efficient Agriculture Covenant, the Government provides subsidies and technical support for innovative projects, such as relating to animal nutrition and less fertilizer use, in the horticulture and livestock subsectors. The Covenant aims at achieving a maximum emission level of 15–18 Mt CO<sub>2</sub> eq of non-CO<sub>2</sub> gases in 2020, a reduction of 4–7 Mt CO<sub>2</sub> eq compared with the 1990 level.

61. **LULUCF.** The ERT noted that the LULUCF sector is a net source of GHG emissions in the Netherlands. GHG emissions from this sector decreased by 0.2 Mt CO<sub>2</sub> eq between 1990 and 2009, an 8.1 per cent decrease. The National Ecological Network targets the creation by 2018 of a 728,500 ha network of nature reserves, including wetlands and terrestrial land. Specific afforestation and reforestation activities are not reported in the

NC5. The ERT encourages the Netherlands to report these activities in its next national communication.

62. **Waste management.** Between 1990 and 2009, GHG emissions from the waste sector decreased by 58 per cent (7.4 Mt CO<sub>2</sub> eq), reaching 5.3 Mt CO<sub>2</sub> eq. The share of the emissions from this sector in the Party's total GHG emissions dropped from 6.0 per cent in 1990 to 2.7 per cent in 2009. This reduction is mainly the result of the decrease in the amount of waste disposed of in landfills, from 13.9 million t in 1990 to 1.7 million t in 2008, which made the associated CH<sub>4</sub> emissions fall abruptly. The share of recycled waste rose from 62 per cent in 1990 to 84 per cent in 2008, and the amount of waste incinerated increased from 3.9 million t to 7.7 million t in the same period. The National Waste Management Plan for the period 2009–2021, the central sectoral PaM, includes guidelines for waste handling, and other measures such as funds for research and raising awareness.

63. To enhance the transparency of the PaMs section in its next national communication, the Netherlands may wish to clarify the link between its PaMs and the national circumstances and to provide any targets or goals.

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

64. The NC5 reports information on how the Netherlands strives to implement PaMs under Article 2 of the Kyoto Protocol in such a way as to minimize adverse effects, including the adverse effects of climate change and effects on international trade and social, environmental and economic impacts, on other Parties, especially developing country Parties. Further information on how the Netherlands 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 Party's 2011 annual submission, is presented in chapter II.I below.

65. The NC5 reports that adverse impacts are reduced if global temperature increase is limited to 2 °C, if dependence on fossil fuels decreases and if Parties included in Annex I to the Convention are able to develop low-carbon energy systems. The NC5 also reports that, in the view of the Netherlands, the Parties generating the most GHG emissions should pay for the adaptation of the Parties with low levels of GHG emissions. The Netherlands participates in a number of bilateral and multilateral initiatives to minimize adverse effects when implementing PaMs. These initiatives include: promoting RES; increasing capacity-building and technology transfer for adaptation to climate change; adding new incentives to reduce deforestation; promoting the use of sustainable biofuels; and research and development in relation to carbon capture and storage and biofuels.

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

66. In general, the GHG emission projections included in the NC5 give a fair indication of the future trends in GHG emissions and removals in the Netherlands given current and projected national circumstances and implemented, adopted and planned PaMs. During the review, the Netherlands provided updated GHG emission projections, finalized in December 2010.

#### **1. Projections overview, methodology and key assumptions**

67. The GHG emission projections in the Netherlands' NC5 include a 'with measures', a 'with additional measures' and a 'without measures' scenario until 2020, presented relative to historical data for the period 1990–2006. Projections are presented on a sectoral

basis, using the same sectoral categories used in the PaMs section of the NC5, and on a gas-by-gas basis for all the GHGs (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, PFCs, HFCs and SF<sub>6</sub>). Projections are also provided in an aggregated format for each sector and for the national total, using global warming potential values. Emission projections related to fuel sold to ships and aircraft engaged in international transport are reported separately and not included in the totals. In addition, the NC5 includes projections for the indirect emissions of nitrogen oxides, sulphur dioxide and non-methane volatile organic compounds. The ERT commends the Netherlands for providing projections for these indirect GHG emissions.

68. However, the ERT noted that the NC5 does not present the projections for non-CO<sub>2</sub> GHG emissions or the sectoral projections relative to historical data. The projections for the LULUCF sector limit their scope to forest land remaining forest land and land converted to forest land and assume the continuation of the situation in 2007. The ERT recommends that the Netherlands include complete projections for the LULUCF sector in its next national communication. To improve the transparency of its national communication, the ERT also recommends that the Netherlands clarify the nature (actual or normalized) of the historical data used for the projections. The ERT encourages the Netherlands to present its projections relative to unadjusted inventory data for the period from 1990 until the latest year available, both in the tables and in the figures, and to include tabular information on the ‘without measures’ and ‘with additional measures’ scenarios. In addition, the Netherlands may wish to include a diagram showing the evolution of its total CO<sub>2</sub> emissions, its major GHG.

69. The different scenarios presented comply with the scenario definitions provided in the UNFCCC reporting guidelines. However, the targets of the planned PaMs in the ‘with additional measures’ scenario are not clear. To increase transparency, the Netherlands may wish to report in its next national communication the assumptions used for the assessment of the PaMs included in the ‘with additional measures’ scenario.

70. The NC5 provides an update of the ‘global economy’ scenario presented in the Party’s fourth national communication (NC4), characterized by relatively high economic growth (2.9 per cent annual GDP growth between 2010 and 2020) and material welfare. Population growth is also relatively high (0.6 per cent annually between 2010 and 2020). The main changes compared with the scenario presented in the NC4 include a higher CO<sub>2</sub> price under the EU ETS, new planned power plants, a strong increase in the demand for heat and power in the greenhouse horticulture subsector, new PaMs for renewable electricity, and the inclusion of new data regarding transport. The NC5 does not include a quantitative comparison of the projections provided in the NC4 and NC5, but this information was provided to the ERT during the review. The ERT encourages the Netherlands to include in its next national communication a comparison of the quantitative assumptions, models used and results of the new projections with those presented in the NC5.

71. The NC5 outlines the assumptions regarding several projection parameters. The projections do not fully account for the effects of the 2009 global downturn, but the effect of the lower economic growth is considered in the uncertainty analysis. The projections assume that the Netherlands will become a net exporter of electricity from 2015 onwards, leading to a sharp increase in the emissions from the energy sector in the ‘with measures’ scenario (from 65 Mt CO<sub>2</sub> eq in 2009 to 104 Mt CO<sub>2</sub> eq in 2020). However, these emissions will be covered by the EU ETS. The NC5 does not include information on some key variables considered in the projections, such as CO<sub>2</sub> prices, energy prices in the high energy prices variant, the evolution of the number of households, the evolution of the CHP capacity in the horticulture subsector, the evolution of the transport demand for passenger traffic, key drivers for the emissions from international bunker fuels and the emission factors applied for the projections, but this information was provided during the review. To

increase transparency, the ERT recommends that the Netherlands include information on the assumptions used for all the important projection parameters and key drivers in its next national communication.

72. In the ‘with measures’ scenario, the Netherlands’ total GHG emissions are estimated to reach 254 Mt CO<sub>2</sub> eq in 2020. The uncertainty analysis of this result shows a range of –29 Mt CO<sub>2</sub> eq to +8 Mt CO<sub>2</sub> eq around this estimate. Uncertainty factors include the entry into operation of new coal-fired power plants, the CO<sub>2</sub> price, the uncertainty of data regarding N<sub>2</sub>O emissions from agriculture, and the price ratio of natural gas to coal. The uncertainty analysis is a combination of model analysis and expert judgement on the factors for which large uncertainties exist. However, the NC5 does not specify which range of values for the projection parameters was used in this analysis, or for which factors expert judgement was applied and for which model analysis. In the high energy prices variant of the ‘with measures’ scenario, it is estimated that the higher prices might lead to a higher level of total GHG emissions in the short term (2010), owing to increased coal use in the energy sector, but the effects in the medium term (2020) are expected to be minimal. The ERT encourages the Netherlands to report in its next national communication the assumptions and ranges of values for parameters used in the uncertainty and sensitivity analyses. In the ‘with additional measures’ scenario, total GHG emissions in 2020 are expected to be between 215 and 240 Mt CO<sub>2</sub> eq. No precise assessment could be included, because the effects of the planned PaMs were still under development at the time of the elaboration of the NC5.

## 2. Results of projections

73. Table 4 shows the key results of the Netherlands’ GHG emission projections included in the NC5. The emission trends are illustrated in the figure below. The Netherlands’ total GHG emissions are expected to be above its Kyoto Protocol target for the period 2008–2012 (annual average 200.3 Mt CO<sub>2</sub> eq) in both the ‘with measures’ and ‘with additional measures’ scenarios. In the ‘with measures’ scenario, total GHG emissions are estimated at 212.8 Mt CO<sub>2</sub> eq in 2010, 0.1 per cent below the base year level but 6.3 per cent above the Kyoto target. This scenario leaves a gap to the Kyoto target of 12.5 Mt CO<sub>2</sub> eq annually.<sup>8</sup> In the ‘with additional measures’ scenario, total GHG emissions in 2010 are estimated at 200–210 Mt CO<sub>2</sub> eq, leading to a gap to the Kyoto target of up to 10 Mt CO<sub>2</sub> eq annually. The Netherlands plans to meet its Kyoto Protocol target through a combination of domestic efforts (PaMs and accounting for activities under Article 3, paragraph 3, of the Kyoto Protocol) and use of Kyoto units (see para. 87 and 88 below).

74. During the review, the Netherlands provided updated GHG emission projections, which consider, among other factors, the effect of the global downturn. Total GHG emissions in 2010 are estimated to reach 204.2 Mt CO<sub>2</sub> eq in the ‘with measures’ scenario and 203.9 Mt CO<sub>2</sub> eq in the ‘with additional measures’ scenario, leading to a gap of around 4 Mt CO<sub>2</sub> eq annually to the Party’s Kyoto target.

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<sup>8</sup> Owing to the lack of values for every year in the period 2008–2012, the projections for 2010 are used as a proxy for the average annual emissions in the period.

Table 4  
Summary of greenhouse gas emission projections for the Netherlands

	Fifth national communication			Updated projections		
	GHG emissions (Mt CO <sub>2</sub> eq/year)	Changes in relation to BY level (%)	Changes in relation to 1990 level (%)	GHG emissions (Mt CO <sub>2</sub> eq/year)	Changes in relation to BY level (%)	Changes in relation to 1990 level (%)
Inventory data 1990 <sup>a</sup>	211.9	-0.6	0.0	211.9	-0.6	0.0
Inventory data 2009 <sup>a</sup>	198.9	-6.6	-6.1	198.9	-6.6	-6.1
Kyoto Protocol base year <sup>b</sup>	213.0	0.0	0.6	213.0	0.0	0.6
Kyoto Protocol target <sup>b</sup>	200.3	-6.0	-5.5	200.3	-6.0	-5.5
'Without measures' projections for 2010 <sup>c</sup>	239.6	12.5	13.1	208.5	-2.1	-1.6
'With measures' projections for 2010 <sup>c</sup>	212.8	-0.1	0.4	204.2	-4.1	-3.6
'With additional measures' projections for 2010 <sup>c</sup>	200–210	-3.8 <sup>d</sup>	-3.2 <sup>d</sup>	203.9	-4.3	-3.8
'Without measures' projections for 2020 <sup>c</sup>	294.3	38.1	38.9	237.5	11.5	12.1
'With measures' projections for 2020 <sup>c</sup>	254.0	19.2	19.9	218.8	2.7	3.3
'With additional measures' projections for 2020 <sup>c</sup>	215–240	6.8 <sup>d</sup>	7.4 <sup>d</sup>	193.0	-9.4	-8.9

Abbreviations: BY = base year, GHG = greenhouse gas.

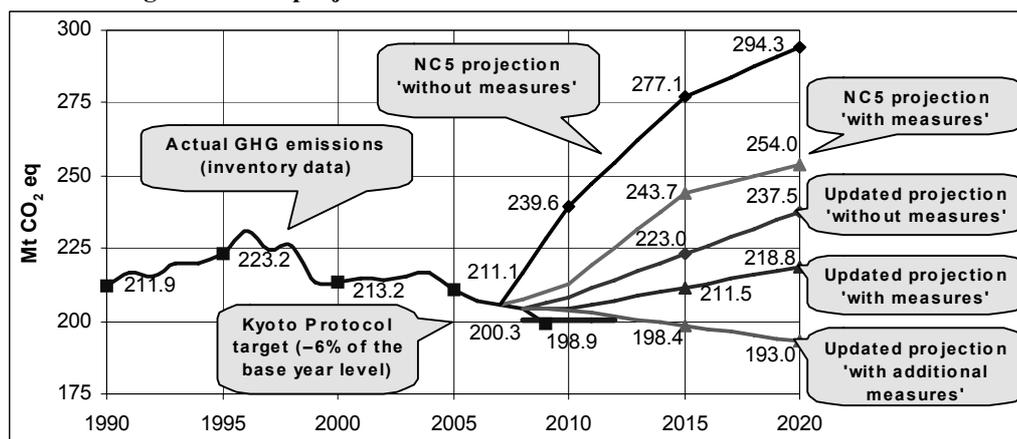
<sup>a</sup> Data source: The Netherlands' 2011 GHG inventory submission, submitted on 15 April 2011; the emissions are without land use, land-use change and forestry (LULUCF).

<sup>b</sup> Data source: Based on the initial report review contained in document FCCC/IRR/2007/NLD.

<sup>c</sup> Data source: The Netherlands' fifth national communication and updated projections provided by the Party during the in-depth review; the projections are for GHG emissions without LULUCF.

<sup>d</sup> The average value of the projection range is used in the calculations.

### Greenhouse gas emission projections



Sources: (1) Data for the years 1990–2009: the Netherlands' 2011 GHG inventory submission; the emissions are without land use, land-use change and forestry (LULUCF); (2) Data for the years 2007–2020: the Netherlands' NC5 and updated projections provided by the Party during the in-depth review; the GHG emissions are without LULUCF.

*Abbreviations:* GHG = greenhouse gas, NC5 = the Netherlands' fifth national communication.

75. The NC5 explains how the Netherlands is going to meet its Kyoto Protocol target in terms of targets for the sources covered and not covered by the EU ETS. The NC5 reports that, of the approximately 1,000 million assigned amount units (AAUs) for the period 2008–2012, the Netherlands has allocated 437 million AAUs for the ETS sector and 563 million AAUs for the non-ETS sector. During the review, the Netherlands clarified that, in the 'with additional measures' scenario presented in the NC5, emissions from the non-ETS sector are expected to reach 555–615 Mt CO<sub>2</sub> eq (depending on the energy prices) in the period 2008–2012, up to a maximum of 52 Mt CO<sub>2</sub> eq above the Kyoto target for the period. The updated projections presented during the review show an expected shortage in AAUs for the non-ETS sector of between 28 and 53 Mt CO<sub>2</sub> eq over the 2008–2012 period.

76. In the 'with measures' scenario, CO<sub>2</sub> emissions are estimated to reach 224.6 Mt CO<sub>2</sub> eq in 2020, a 41 per cent increase on the 159.3 Mt CO<sub>2</sub> eq in 1990. CO<sub>2</sub> emissions from energy industries are expected to increase sharply after 2010, as a result of the expected entry into operation of new coal-fired power plants, while CO<sub>2</sub> emissions from the transport sector are expected to show continued growth. The share of CO<sub>2</sub> emissions in the Party's total GHG emissions is expected to reach 88 per cent in 2020 from 75 per cent in 1990.

77. CH<sub>4</sub> emissions are estimated to reach 14.6 Mt CO<sub>2</sub> eq in 2020 (compared with 25.5 Mt CO<sub>2</sub> eq in 1990), mainly as a result of the decrease in emissions from the waste sector and despite the estimated increase in CH<sub>4</sub> emissions from the agriculture sector. The share of CH<sub>4</sub> emissions in the Party's total GHG emissions in 2020 is estimated at 5.7 per cent (compared with 12.1 per cent in 1990). N<sub>2</sub>O emissions are projected to reach 12.1 Mt CO<sub>2</sub> eq in 2020 (40 per cent below the 1990 level, but 25 per cent above the 2009 level), while F-gas emissions are expected to increase slightly on the 2009 level.

78. In the 'with measures' scenario of the updated projections, total GHG emissions in 2020 are estimated at 218.8 Mt CO<sub>2</sub> eq, 3.3 per cent above the 1990 level and 10.0 per cent above the 2009 level. In the 'with additional measures' scenario, total GHG emissions in 2020 are estimated at 193.0 Mt CO<sub>2</sub> eq, a decrease of 3 per cent from the 2009 level (and a decrease of 8.9 per cent from the 1990 level).

79. The NC5 reports a national policy target of 150 Mt CO<sub>2</sub> eq for 2020. The emission target for the ETS sector is 59 Mt CO<sub>2</sub> eq and the target for the non-ETS sector is 89 Mt CO<sub>2</sub> eq,<sup>9</sup> a 30 per cent emission reduction compared with the 1990 level for both sectors. The NC5 also reports that, after the approval of the EU climate and energy package in 2008, the Netherlands adopted the policy target of that package (a 21 per cent emission reduction by 2020 compared with the 2005 level) for the ETS sector. The target for the non-ETS sector remained a 30 per cent emission reduction by 2020 compared with the 1990 level. The NC5 further reports that the implementation of EU climate policy and the adopted and proposed measures in the CEP lead to expected emissions of 88–105 Mt CO<sub>2</sub> eq from the non-ETS sector in 2020, a range of –1 to +16 Mt CO<sub>2</sub> eq from the policy target. The ERT noted that this estimate is lower than the projections for the non-ETS sector included in the 'with additional measures' scenario, and therefore encourages the Netherlands to ensure consistent reporting in its next national communication.

80. During the review, the Netherlands explained that for the non-ETS sector the new Government withdrew the 30 per cent national emission reduction target and adopted the target included in the EU climate and energy package. This target, a reduction in emissions of 16 per cent compared with the 2005 level, sets the maximum emission level in 2020 at 99 Mt CO<sub>2</sub> eq. The ERT noted that the new target is less ambitious than the previous target.

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<sup>9</sup> The ERT noted that the sum of the targets for the ETS and non-ETS sectors for 2020 is 148 Mt CO<sub>2</sub> eq.

In the ‘with additional measures’ scenario in the updated projections, the emissions in 2020 from the non-ETS sector are estimated at 87–104 Mt CO<sub>2</sub> eq. The 2020 target for the non-ETS sector is within reach if adopted and planned PaMs are implemented and if the flexibility mechanisms allowed under the EU effort-sharing decision are used if necessary.

### 3. Total effect of policies and measures

81. The NC5 presents the estimated effect of implemented and adopted PaMs, individually or by cluster of PaMs addressing the same source, by sector and by gas. This effect is calculated on the basis of the ‘reference scenario’ developed in 2005 and presented in the NC4. Information is presented in terms of GHG emissions avoided or sequestered, by gas (on a CO<sub>2</sub> eq basis), in 2010, 2015 and 2020. The NC5 also presents relevant information on factors and activities for most sectors for the years 1990 to 2020.

82. However, the ERT noted that while the NC5 provides an aggregated estimate of the effect of all the Party’s implemented and adopted PaMs, and a bandwidth for the aggregated estimate of the effect of all its additional (planned) PaMs in graphical format, it does not provide these estimates in tabular format. From the estimates of the effects of the Party’s individual PaMs, the ERT estimated the total effect of the Party’s adopted and implemented PaMs at 26.8 Mt CO<sub>2</sub> eq in 2010, 33.4 Mt CO<sub>2</sub> eq in 2015 and 40.3 Mt CO<sub>2</sub> eq in 2020. The ERT recommends that the Netherlands improve the transparency of its reporting of the total effect of its implemented and adopted PaMs in its next national communication.

83. PaMs implemented in the energy sector will deliver more than half of the total emission reductions in both 2010 and 2020. PaMs implemented in the industrial sector will contribute a fifth of the total emission reductions, the same as PaMs implemented in the waste sector. PaMs in the transport sector, the sector with the fastest-growing emissions, will contribute less than 10 per cent of the total effect of the Party’s PaMs. The most effective PaMs and the drivers behind GHG emission reductions are described in chapters II.B.1 to II.B.3 above. Table 5 provides an overview of the total effect of the Netherlands’ PaMs as reported in the NC5.

Table 5

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

Sector	2010		2020	
	Effect of implemented and adopted measures (Mt CO <sub>2</sub> eq)	Relative value (% of GHG emissions in 2010 in the ‘without measures’ scenario)	Effect of implemented and adopted measures (Mt CO <sub>2</sub> eq)	Relative value (% of GHG emissions in 2020 in the ‘without measures’ scenario)
Energy (without CO <sub>2</sub> from transport)	15.3	6.4	26.3	8.9
Transport – CO <sub>2</sub>	1.8	0.8	2.2	0.7
Industrial processes	4.8	2.0	5.8	2.0
Agriculture	0.9	0.4	0.0	0.0
Land-use change and forestry	NA	NA	NA	NA
Waste management	4	1.7	6	2.0
<b>Total</b>	<b>26.8</b>	<b>11.2</b>	<b>40.3</b>	<b>13.7</b>

*Data source:* The Netherlands’ fifth national communication.

*Note:* The total effect of implemented and adopted policies and measures (PaMs) is defined as the sum of the individual effects of the implemented and adopted PaMs.

*Abbreviations:* GHG = greenhouse gas, NA = not available.

84. In the ‘with measures’ scenario, GHG emissions from the energy sector are expected to increase by over 60 per cent between 2006 and 2020, but most of these emissions are covered by the EU ETS. For the industrial sector, the expected increase in emissions is 6 per cent over the same period, and most of these emissions will also be covered by the EU ETS. Emissions from the agriculture and transport sectors are projected to increase by 14 per cent and 12 per cent, respectively. Emissions from the sector other, which includes emissions from the residential, commercial and services sectors, are expected to decrease by 6 per cent. The ERT encourages the Netherlands to provide further information on the expected developments in each of the sectors in its next national communication.

85. The ERT encourages the Netherlands to enhance the transparency of its reporting on its GHG emission projections in general. In particular, the ERT recommends that the Netherlands, in its next national communication, provide information on the assumptions used for all key projection parameters and key drivers, on the values used for the sensitivity analysis, and on the effects of the planned PaMs included in the ‘with additional measures’ scenario, and that it include the estimated total effect of its PaMs. The ERT encourages the Netherlands to provide, in its next national communication: further explanation of the results of its projections; the results in tabular format for all the scenarios presented, including the historical emissions data for the period from 1990 until the latest year available; and further information on how emission projections for non-CO<sub>2</sub> GHGs are made.

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

86. The NC5 provides implicit information on how the Netherlands’ use of the Kyoto Protocol mechanisms is supplemental to domestic action, but it does not elaborate on supplementarity as such. In the NC5, the Party’s estimated use of Kyoto units (13 Mt annually) is compared with the estimated GHG emissions avoided by its domestic actions (in 2008, 60 Mt CO<sub>2</sub> eq) and by domestic actions and autonomous developments together (139 Mt CO<sub>2</sub> eq). During the review, the Netherlands explained that the use of Kyoto units is considered supplemental to domestic action if the number of Kyoto units used is equal to or lower than the estimated effect of domestic actions. The ERT recommends that the Netherlands provide, in its next national communication, further information on how its use of the Kyoto Protocol mechanisms is supplemental to domestic action. The ERT noted that the estimate of the total effect of the Party’s PaMs in 2010 as reported in the PaMs section of the NC5 (26.8 Mt CO<sub>2</sub> eq) is less than half of the estimated effect of domestic PaMs used to demonstrate the supplementarity of the Party’s use of the Kyoto Protocol mechanisms (60 Mt CO<sub>2</sub> eq in 2008). To enhance transparency, the ERT encourages the Netherlands to use a consistent approach in the assessment of the effect of domestic policies for its next national communication.

87. The NC5 reports a maximum annual use by the Government of 13 Mt Kyoto units for the non-ETS sector, but, during the review, the Netherlands reported that the latest estimates indicate an annual need for 5.6–10.6 Mt Kyoto units, or 8.1 Mt on average. Also, the Netherlands clarified that Dutch companies under the EU ETS are allowed to use up to 8.7 Mt Kyoto units annually (43 Mt in the period 2008–2012), 10 per cent<sup>10</sup> of their average annual allocation. The aggregated maximum use of Kyoto units (19.3 Mt: 10.6 Mt by the Government and 8.7 Mt by EU ETS companies), therefore, is not expected to exceed 42

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<sup>10</sup> Limit on the use of units from joint implementation and clean development mechanism projects in the approved national allocation plan.

percent of the domestic effort,<sup>11</sup> which is less than the 50 per cent threshold used by the Party to define supplementarity. The ERT encourages the Netherlands to include in its next national communication information on the limits on the use of Kyoto units by the ETS sector.

88. The Dutch Government has allocated around EUR 600 million for the acquisition of Kyoto units for the period 2008–2012. During the review, the Netherlands reported that it has contracts with around 70 clean development mechanism (CDM) and joint implementation (JI) projects via different instruments, such as a public procurement procedure, arrangements with multilateral and regional financial institutions, a facility with a private bank and participation in carbon funds, and that it is engaged in one green investment scheme (GIS). The contracted CDM and JI projects are spread over the different continents and include different technologies. The Netherlands expects to purchase up to 53 Mt Kyoto units for the period 2008–2012, of which 62 per cent would come from CDM projects, 32 per cent from JI projects and 6 per cent from international emissions trading (AAUs via a GIS project).

#### D. Vulnerability assessment, climate change impacts and adaptation measures

89. The NC5 provides the required information on the expected impacts of climate change in the country and on adaptation options. In addition, the NC5 reports on cooperation on vulnerability and adaptation with developing countries and the Party's contributions to the Nairobi work programme on impacts, vulnerability and adaptation to climate change. The NC5 provides an update of the impact assessment reported in the NC4 through a wide range of global and regional climate models. The Netherlands may wish to provide further information in its next national communication on: the methodologies and techniques applied to analyse vulnerability and adaptation and establish priorities; mainstreaming adaptation into the national development process; and the progress of support programmes for Parties not included in Annex I to the Convention (non-Annex I Parties). Table 6 summarizes the information on vulnerability and adaptation to climate change presented in the NC5.

Table 6

##### Summary of information on vulnerability and adaptation to climate change

<i>Vulnerable area</i>	<i>Examples/comments/adaptation measures reported</i>
Agriculture and food security	<p><i>Vulnerability:</i> The agriculture sector will be negatively affected by: high water levels and flooding; more frequent and longer soil water deficits during the summer; an increase in the seepage of brackish groundwater; and increasing risks of diseases, pests and extreme weather events. However, the change in climate will also bring an extension of the growing season</p> <p><i>Adaptation:</i> Research is important in identifying opportunities and threats and in developing innovative strategies, especially in three areas: national and European agriculture and energy policies; renewal of agricultural and horticultural practices; and nature management. Initial adaptation strategies have been developed, including 'climate buffers' (water-holding areas) to reduce the risk of flooding and the</p>

<sup>11</sup> Calculated by the ERT as follows: 26.8 Mt CO<sub>2</sub> eq emission reduction in 2010 by domestic efforts (total effect of PaMs); maximum use of Kyoto units at 19.3 Mt (10.6 Mt Government use and up to 8.7 Mt used by EU ETS companies); total effort is therefore 26.8 + 19.3 = 46.1 Mt CO<sub>2</sub> eq in 2010, of which Kyoto units account for 42 per cent.

<i>Vulnerable area</i>	<i>Examples/comments/adaptation measures reported</i>
Biodiversity and natural ecosystems	<p>effects of prolonged drought, and ‘green and blue services’ to incorporate water management services into farming</p> <p><i>Vulnerability:</i> The likely increase in winter and decrease in summer of surface and groundwater levels will affect biodiversity and natural ecosystems. Alien plants and animals, including pests, will appear more often. Aquatic and wet-terrestrial ecosystems (stream and river systems, wetlands, wet heath and raised bog) already show irreversible effects as a result of the rise in temperature. Knowledge on the impacts is still limited</p> <p><i>Adaptation:</i> Enlarging connected areas and corridors and establishing favourable environmental conditions will increase the natural adaptive capacity. The current focus on conservation (biodiversity and target species) will change to a more development-oriented policy (functioning of the ecosystem, and creation of conditions). The construction of climate buffer zones in critical areas will improve their adaptation capacity</p>
Coastal zones	<p><i>Vulnerability:</i> Rising sea level and greater variation in river discharge will affect coastal ecosystems. About a quarter of the flood defences do not fully comply with the current standard, and the compliance of another 30 per cent is uncertain. The worst case scenario of a 1.5 m sea level rise per century poses a serious threat</p> <p><i>Adaptation:</i> Sand replenishment and redistribution help the coastal zone to rise together with the sea. Flood protection will be increased by a factor of 10. Increasing the cooperation between the national and regional levels will enhance water safety</p>
Urban areas	<p><i>Vulnerability:</i> Soil water deficits during the summer will lead to reduced groundwater levels, which will affect freshwater supply and increase heat stress (heat islands) and the vulnerability of buildings’ foundations. The risk of flooding during the wet season and extreme weather events will increase</p> <p><i>Adaptation:</i> Enhanced natural flooding buffers (sand, hills and upstream areas) will hold water from (extreme) precipitation longer. Climate buffer zones will be constructed in critical areas. Urban areas will be ‘climate proofed’ with ‘green and blue’ measures (green roofs, public spaces and the construction of new open water spaces)</p>
Fisheries	<p><i>Vulnerability:</i> The temperature of the North Sea water has risen by 0.5 °C and of the Wadden Sea by 1 °C, and, as a result, cod and flatfish are moving away. Exotics species without natural enemies could become invasive and damaging, such as the invasion of mussel beds by Japanese oyster. Fluctuation in the salinity of coastal areas as a result of increased river discharge will disrupt ecosystems. Marsh ecosystems will be affected by changes in tide heights</p> <p><i>Adaptation:</i> Policies and measures to protect the marine environment, such as the European Union Water Framework Directive (directive 2000/60/EC), support the resilience of these ecosystems</p>
Forests	<p><i>Vulnerability:</i> Higher temperatures have already changed some ecosystems (e.g. forest composition), sometimes irreversibly. The scale and rate of change depends heavily on local conditions. Species will be affected differently by more frequent storms</p> <p><i>Adaptation:</i> A new method of prolonged monitoring of the growth of trees started in 2006 to gain more insight into both the short-term impact on forests and the adaptability of trees in forest reserves</p>

<i>Vulnerable area</i>	<i>Examples/comments/adaptation measures reported</i>
Human health	<p><i>Vulnerability:</i> Human health is very likely to be affected by stresses due to heat, drought and flooding, including vector-transmitted diseases, allergies, infectious diseases and heat stress. Impacts from storms are moderately likely. Owing to high population concentrations, there is a high probability of a large number of casualties in a single flood episode</p> <p><i>Adaptation:</i> The National Heat Plan, spatial and non-spatial measures, 'green and blue' measures and improved contingency evacuation plans address the vulnerability of urban areas. The Heat and City project studies climate, temperature, heat stress and thermal comfort in urban areas. Enhancing the transport and energy networks increases the adaptive capacity of urban areas</p>
Infrastructure and economy	<p><i>Vulnerability:</i> Road surface damage and corrosion of buildings will increase. Energy consumption for heating will decrease during winter, but energy for cooling will increase during summer. Flooding could severely affect transportation and energy networks, causing important economic losses. River ways will be affected by low- and high-water periods</p> <p><i>Adaptation:</i> The vulnerability of infrastructure is mitigated by an improved water safety policy, insurance schemes (in the Netherlands, flood damage is not insurable but is partly compensated in some cases by the Injury Allowance Act), special attention being paid to the most vulnerable areas, public awareness, spatial measures for water control, and the improvement of infrastructure</p>
Water resources	<p><i>Vulnerability:</i> The water system is highly vulnerable to climate change. Coastal defences have high resistance but low resilience. Dikes and flood protection measures needs to be upgraded. Water intake and freshwater supply will be affected by increased penetration of salty water as the sea level rises. Further warming and an increasing precipitation deficit could cause considerable problems as early as 2050</p> <p><i>Adaptation:</i> The adaptive capacity of the freshwater supply is limited, but increased cooperation between regional and local authorities could improve its resilience. Incentives to enhance retention areas, 'blue services' such as paying the farmers that enhance water storage areas, and initiatives to adapt to salination are in place and developing</p>

90. Vulnerability assessment is conducted in European and national research projects and studies, with an emphasis on flooding and the breaching of water-retaining structures, given the characteristics of this coastal country (a subsiding, low-lying delta area with large areas below sea level, four large rivers and high population density). A new Delta Committee was established in 2007 to advise on water policy and spatial planning for 2100 and beyond. It identified two priorities: flood protection and securing freshwater supplies. To adapt to flooding, the Delta Committee considers scenarios with low probability but high impact: by 2100, a sea rise of 1.2 m on the Dutch coast and a 40 per cent increase in the peak discharge of the Rhine. The Netherlands has provided detailed information in its NC5 on the expected impacts of climate change on nature, agriculture, recreation, public health, housing and infrastructure, energy and transport.

91. The National Programme for Spatial Adaptation to Climate Change, initiated in 2006, brings together several ministries and the associations of provinces, municipalities and waterboards. This intersectoral, cooperative programme produced the National Adaptation Strategy in 2007. The strategy considered impacts on water safety, nature,

agriculture, recreation, urban environment and industry and promotes anticipative action and innovation when addressing vulnerabilities. Regional initiatives will be included in the National Adaptation Agenda, under preparation, covering a wide range of topics, from climate in the city to international corridors. Some initiatives, such as planMER and the Water Assessment and Building Act, include the consideration of adaptive capacity in planning instruments.

92. The NC5 describes the assistance provided to non-Annex I Parties for adaptation, including the Global Environmental Facility (GEF) Least Developed Countries Fund. Technical and financial support is provided through bilateral and multilateral cooperation in different regions, particularly in Africa and Asia. The focus area is mainly water and coastal zone management: Viet Nam received EUR 1.2 million for water management; Bangladesh EUR 11.0 million for water and coastal zone management; and Senegal EUR 5.9 million for river management. In addition, the Netherlands supported the establishment of the Red Cross/Red Crescent Climate Centre to raise awareness, within and outside the organization, in relation to climate change adaptation and disaster risk reduction.

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

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

93. The NC5 provides all the information required under the Convention and its Kyoto Protocol, including information on what “new and additional” financial resources the Netherlands has provided pursuant to Article 4, paragraph 3, of the Convention and how these resources have been determined as “new and additional”. To improve transparency, the ERT encourages the Netherlands to further explain how financial resources are determined as being “new and additional” in its next national communication. During the review, the Netherlands explained that all financial resources beyond its official development assistance (ODA) of 0.8 per cent of gross national income (GNI) were considered “new and additional”, but that after the change of the Government in 2010 the threshold was lowered to 0.7 per cent of GNI.

94. The Netherlands has provided detailed information on the assistance it has made available to developing country Parties that are particularly vulnerable to the adverse effects of climate change to help them meet the costs of adaptation to those adverse effects. Furthermore, the Netherlands has provided information on financial resources related to the implementation of the Convention provided through bilateral, regional and other multilateral channels, including the GEF. During the review, the Netherlands reported its pledge of EUR 82.9 million for the fifth replenishment of the GEF for the period 2010–2013.

95. The NC5 reports on the Party’s financial contribution to the Adaptation Fund, established in accordance with decision 10/CP.7. To enhance the implementation of the Convention by developing countries, during the period 2005–2008, the Netherlands contributed EUR 1.1 million to the Adaptation Fund and EUR 3.0 million to the Readiness Fund of the Forest Carbon Partnership Facility (as part of the Dutch EUR 15 million contribution for the 2008–2012 period to the Readiness Fund).

96. The NC5 describes the Party’s Promoting Renewable Energy Programme (PREP) to help developing countries, especially countries in Africa and Indonesia, to develop and implement RES projects that also contribute to poverty reduction. The PREP has a budget of EUR 500 million for the period 2008–2011, of which EUR 375 million is beyond the 0.8 per cent of GNI threshold and therefore “new and additional”. During the review, the ERT

learned that, of that EUR 375 million, EUR 300 million is the pledge for fast-start financing under the Copenhagen Accord of 18 December 2009, but that the new Government is reviewing these arrangements. Table 7 summarizes the information reported on financial resources.

Table 7  
**Summary of information on financial resources for 2005–2008**

<i>Channel of financial resources</i>	<i>Years of disbursement</i>			
	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>
Official development assistance (ODA) as a percentage of gross national income	0.83	0.82	0.81	0.80
Total ODA for nature and environment (EUR million)	501.5	537.8	615.4	635.2
Total ODA related to climate (EUR million)	79.3	82.1	81.5	98.7
Climate-related expenditure (bilateral programmes and civil-society support) (EUR million)	50.9	49.1	49.5	67.0
Contributions to the GEF, ODA (EUR million) <sup>a</sup>	24.4	40.0	33.4	24.1
Contributions to the GEF, non-ODA (EUR million) <sup>a</sup>	5.5	10.8	9.4	0.8
Climate change bilateral and civil society support expenditure on mitigation (EUR million)	36.4	31.1	35.6	51.3
Climate change bilateral expenditure on adaptation (EUR million)	13.5	15.7	12.2	12.9
JI and CDM under the Kyoto Protocol (non-ODA) (EUR million)	26.2	29.0	32.3	49.3

*Sources:* The Netherlands' fifth national communication and information received during the review.

*Abbreviations:* CDM = clean development mechanism, GEF = Global Environment Facility, JI = joint implementation.

<sup>a</sup> 40 per cent of the contributions to the GEF are allocated to climate.

97. In the ODA for the 2005–2008 period, the share of financial resources provided to multilateral institutions declined, while that for bilateral and regional cooperation increased. Over the same period, the resources for adaptation varied between a half and one quarter of the mitigation resources.

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

98. The NC5 provides detailed information on measures related to the promotion, facilitation and financing of the transfer of, or access to, environmentally sound technologies and clearly distinguishes between activities undertaken by the public sector and the private sector. The NC5 reports on bilateral and multilateral activities related to transfer of technology, including institutional support for the development and transfer of technology, the promotion of the participation of the private sector, and technology research and development in relation to mitigation and adaptation. Most of the support, including in relation to 'hard' and 'soft' environmentally sound technologies, is channelled through the private sector. The NC5 also reports on steps taken by governments to promote, facilitate and finance transfer of technology and to support the development and enhancement of endogenous capacities and technologies of developing countries. The NC5 provides information on programmes to improve the access to finance of the private sectors of developing countries.

99. The NC5 reports that expenditure on technology transfer focuses on mitigation, particularly RES, rather than on adaptation. Capacity-building and dissemination of endogenous technologies are especially relevant in biomass energy projects. The Netherlands is committed to providing 10 million persons in developing countries with sustainable energy services by 2015. Between 2004 and 2008, 6.3 million persons got access to modern, sustainable forms of energy, including biogas installations, small-scale hydraulic power stations and solar panels.

100. The NC5 provides information on financial incentive programmes for the private sector to participate in the development and transfer of environmentally sound technologies, particularly in the energy sector. The former Programme for Cooperation with Emerging Markets, now the Private Sector Investment Programme, subsidizes a part of the investment costs of eligible projects in emerging markets, while the Facility for Infrastructure Development supports non-commercial environmental and sustainable investments in developing countries.

101. The ERT noted that several funds have been established to support RES: the Access to Energy Fund has a EUR 70 million budget for the 2006–2014 period for loans to provide access to energy for 2.1 million people, and around half of the loans are for renewable energy projects; the Daey Ouwens Fund, created in 2008, has a budget of EUR 20 million to promote access to sustainable energy for 800,000 persons through small-scale RES and job creation in the least developed countries, especially in sub-Saharan Africa; and the Global Sustainable Biomass Fund, created in 2009, has a budget of EUR 12.5 million to support the sustainable production of biomass for energy use (this fund complements the EUR 7.5 million Sustainable Biomass Import Fund). Indonesia and Mozambique receive support for sustainable biomass production and the participation of small farmers in the production chain. SNV Netherlands Development Organisation, supported with the EUR 12.9 million of the Dutch Asia Biogas Programme for 2005–2012, has equipped more than 250,000 households with biogas plants. The success of SNV led to an additional target of 1 million biogas plants in Asia (in cooperation with the Asian Development Bank) and EUR 29.9 million to install 70,000 biogas plants in Africa. The Netherlands has supported capacity-building under the CDM since 2002 through the Capacity Development for the CDM initiative (EUR 3.3 million in the period 2005–2008).

102. The ERT noted that the information provided on transfer of technology, including the information under Article 10 of the Kyoto Protocol, could be made more transparent. Specifically, the ERT recommends that the Netherlands provide further information on its cooperation with developing countries on research and development and deployment of technologies for mitigation and adaptation in its next national communication.

## **F. Research and systematic observation**

103. The NC5 provides information on the Netherlands' actions relating to research and systematic observation (RSO) and addresses both domestic and international activities, including the World Climate Research Programme (WCRP), the International Geosphere–Biosphere Programme (IGBP), the Global Climate Observing System (GCOS) and the Intergovernmental Panel on Climate Change (IPCC). The NC5 also reflects action taken to support related capacity-building in developing countries, particularly in Africa.

104. The Knowledge for Climate, Climate changes Spatial Planning and Energy Transition programmes are national research programmes on climate change issues. Different organizations in the Netherlands conduct research related to RSO individually and in clusters. The Netherlands cooperates internationally in RSO with the EU and countries worldwide (Global Earth Observation System of Systems). The Climate Monitoring in

Africa initiative was established to assist the region with RSO. Dutch researchers actively participate in IPCC activities.

105. The Netherlands has participated in working groups of the IGBP, WCRP, International Human Dimensions Programme and IPCC. It is also involved in the EU Sixth and Seventh Framework Programmes. The monitoring activities in the Netherlands are embedded in international programmes (European and global). The Netherlands has provided a summary of information of national efforts related to networks specified in the GCOS implementation plan. This includes the atmospheric, oceanic and terrestrial essential climate variables. The ERT noted that the Netherlands is developing an integrated national programme in contribution to GCOS. The ERT commends the Netherlands for its reporting of its RSO initiatives.

## **G. Education, training and public awareness**

106. The NC5 reports on the Netherlands' actions relating to education, training and public awareness at both the domestic and the international level. The NC5 also reports on the Party's activities related to the New Delhi work programme on Article 6 of the Convention.<sup>12</sup> SenterNovem is the agency responsible for training at professional levels, while Milieu Centraal focuses on the consumers. However, the NC5 included limited information on training programmes, particularly in relation to international cooperation and support relating to Article 6 of the Convention. The Netherlands may wish to provide further information on international cooperation and on support for the implementation of the New Delhi work programme in its next national communication.

107. The NC5 reports similar information on education and training to the NC4. Priorities in education include clean and efficient energy, and water management. The Netherlands uses the education system, public-awareness campaigns and access to environmental information to enhance public participation in relation to climate change issues. In addition, the NC5 indicates that there are various training programmes directed at professionals and students in developing countries.

108. The Subsidy Scheme for Civil Society Organizations and the Environment had a budget of EUR 6 million in 2009 to support environmental projects and programmes of non-profit organizations. EUR 450,000 was allocated to projects with an emphasis on international cooperation, reduction of GHG emissions, energy efficiency and renewable energy. The Hier climate campaign involves more than 40 organizations, mostly non-governmental organizations (NGOs), in coordinated consumer campaigns, raising awareness, joint communication efforts and political lobbying.

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

109. The Netherlands has provided all supplementary information under Article 7, paragraph 2, of the Kyoto Protocol in its NC5. The supplementary information is placed in different sections of the NC5. Table 8 provides an overview of the supplementary information under Article 7, paragraph 2, of the Kyoto Protocol as well as references to the sections of the NC5 in which this information is provided. The technical assessment of the information reported under Article 7, paragraph 2, of the Kyoto Protocol is contained in the relevant chapters of this report.

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<sup>12</sup> Decision 11/CP.8.

Table 8  
**Overview of supplementary information under Article 7, paragraph 2, of the Kyoto Protocol**

<i>Supplementary information</i>	<i>Reference</i>
National system	NC5 section 3.3.(C)
National registry	NC5 section 3.4.(D)
Supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17	NC5 section 5.3.(C)
Policies and measures in accordance with Article 2	NC5 section 4.4.(C)
Domestic and regional programmes and/or legislative arrangements and enforcement and administrative procedures	NC5 section 4.3.(B)
Information under Article 10	NC5 sections 3.3.(C), 4.3.(B), 6.3(C), 7.4.(D) and 8, and annexes 8.1 and 9
Financial resources	NC5 sections 7.1.(A), 7.2.(B) and 7.3.(C)

*Abbreviation:* NC5 = Fifth national communication of the Netherlands.

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

110. The Netherlands reported the information requested in section H, “Minimization of adverse impacts in accordance with Article 3, paragraph 14”, of the annex to decision 15/CMP.1 as a part of its 2011 annual submission. It has not reported, however, how it gives priority to the actions taken in implementing its commitments under Article 3, paragraph 14. The ERT recommends that the Netherlands include this information in its next annual submission. The ERT encourages the Netherlands to continue exploring methods for evaluating the adverse impacts of response measures and to continue its reporting on the minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol in its annual submissions.

111. During the review, the Netherlands presented additional information, including the information provided in its 2011 annual submission, on how it strives to implement its commitments under Article 3, paragraph 1, of the Kyoto Protocol in such a way as to minimize adverse social, environmental and economic impacts on developing country Parties, particularly those identified in Article 4, paragraphs 8 and 9, of the Convention. The ERT considers the reported information to be transparent.

112. The Netherlands considers that climate-related PaMs may have positive and negative effects, and mostly indirect effects, on other Parties. The Netherlands emphasized that the lack of an internationally agreed methodology for evaluating the adverse impacts of climate-related PaMs on developing country Parties makes it difficult to assess such impacts and to be more specific in terms of priority being given to specific actions and the relevant effects of its PaMs.

113. The Party’s 2011 annual submission and additional information provided during the review presented several initiatives to minimize adverse impacts. The Netherlands emphasizes the diversification of its portfolio of PaMs by implementing PaMs across Parties (national, European and other Parties), sectors and technologies and by focusing on both CO<sub>2</sub> and non-CO<sub>2</sub> GHGs. The Netherlands is cooperating in a demonstration project

for carbon capture and sequestration, and the lessons learned will be made publicly available. The biofuels used in transport satisfy sustainability criteria relating to GHG emissions and the protection of biodiversity.

114. In international climate negotiations, the Netherlands focuses strongly on finance, specifically on transparency in the amounts and use of finance, helping to build trust in the process, and welcomes the establishment of the Green Climate Fund. Knowledge-sharing and capacity-building in relation to adaptation, disaster prevention and risk management are important steps, including finance for adaptation, especially for the most vulnerable countries. In that direction, the establishment of the Cancun Adaptation Framework is welcomed. The cost-efficient allocation of resources under the CDM, JI and new mechanisms to be designed contributes to minimizing impacts on the world economy.

115. The Netherlands assists developing country Parties to promote RES and related policies, and the PREP is an important instrument to this end (see para. 96 above). The Netherlands cooperates with several programmes of international financial institutions on RES, including the World Bank, the International Finance Corporation and the Asian Development Bank, that promote the diffusion of knowledge, capacity-building and access to finance for RES projects.

### III. Conclusions and recommendations

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

117. The Netherlands' GHG emissions in 2009 excluding LULUCF were 6.1 per cent below the 1990 level and 6.2 per cent below the 1990 level including LULUCF. Emission decreases were driven by reductions in emissions of non-CO<sub>2</sub> GHGs and the improved efficiency of energy supply and use. These factors outweighed the impact of economic growth (GDP increased by 55 per cent between 1990 and 2009) and the related increase in energy demand.

118. The NC5 presents GHG emission projections for the period 2007–2020. Three scenarios are included: 'without measures', 'with measures' and 'with additional measures', and the projected GHG emission levels under these scenarios in 2010 are +12.5 per cent, -0.1 per cent and -3.8 per cent compared with the base year level, respectively. During the review, the Netherlands presented updated projections: the updated projected GHG emission levels in 2010 under the 'with measures' and 'with additional measures' scenarios are -4.1 per cent and -4.3 per cent compared with the base year level, respectively.

119. The projections indicate that the Netherlands cannot meet its Kyoto Protocol target for the first commitment period (a 6 per cent reduction in emissions compared with the base year level) with domestic efforts alone. The Netherlands has distributed its Kyoto Protocol target between the ETS and the non-ETS sector. The Government plans to use up to 53 Mt Kyoto units in the period 2008–2012 (10.6 Mt annually) to meet its Kyoto Protocol target for the non-ETS sector, and Dutch companies under the EU ETS are allowed to use up to 43 Mt Kyoto units (8.7 Mt annually). The NC5 contains information on how the Netherlands' use of the mechanisms under Articles 6, 12 and 17 of the Kyoto Protocol is supplemental to domestic action, although it does not elaborate on supplementarity as such. Together, the Netherlands' ETS and non-ETS sectors plan to use a maximum annual average of 19.3 Mt Kyoto units, which accounts for less than the estimated effect of implemented and adopted domestic PaMs (26.8 Mt CO<sub>2</sub> eq).

120. The NCPIP is the key framework plan for the Netherlands to meet its Kyoto Protocol target for the 2008–2012 period, and the CEP set targets for 2020 for GHG emissions, energy efficiency and RES. During the review, the Netherlands reported that the CEP and its rigorous targets had been withdrawn. The new targets for GHG emissions (a 21 per cent decrease compared with the 2005 level for sources covered by the EU ETS and a 16 per cent decrease for sources not covered by the EU ETS) and RES (a 14 per cent share of RES in total energy consumption), based on the EU targets for 2020, are less ambitious, and there is no economy-wide target for energy efficiency. However, most of the PaMs associated with the CEP are expected to continue. The EU ETS is the main PaM for the ETS sector, displacing voluntary agreements. A range of financial incentives, mandatory standards and voluntary agreements address GHG emissions from the non-ETS sector.

121. During the review, the Netherlands clarified that all financial resources beyond its ODA of 0.8 per cent of GNI were considered “new and additional”, including the EUR 300 million pledged for the period 2010–2012 in response to the Copenhagen Accord of 18 December 2009, but that after the change of the Government in 2010 the threshold was lowered to 0.7 per cent of GNI. The climate-related assistance provided to developing countries focuses on RES, capacity-building and water management.

122. The focus of the Netherlands’ vulnerability analysis is flooding and water-retaining structures, and freshwater supply. The Delta Committee advises on water policy and spatial planning for 2100 and beyond. The central Government and the associations of regions, municipalities and waterboards produced the National Adaptation Strategy, approved in 2007. The sectors assessed included water safety, nature, agriculture, recreation, urban areas and industry.

123. The education system covers topics such as renewable energy, energy efficiency and water management. In addition, public-awareness campaigns and access to environmental information enhance public participation in relation to climate change issues. Domestic and international projects of NGOs are supported. The Netherlands is actively participating in RSO activities internationally.

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

125. 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 2011 annual submission is mostly complete and transparent.

126. In the course of the IDR, the ERT formulated several recommendations relating to the completeness and transparency of the Netherlands’ reporting under the Convention and its Kyoto Protocol. The key recommendations<sup>13</sup> are that the Netherlands, in its next national communication:

(a) Improve the completeness of its reporting by including complete projections for the LULUCF sector;

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<sup>13</sup> The recommendations are given in full in the relevant sections of this report.

- (b) Improve the transparency of its reporting by including further information on:
  - (i) Voluntary agreements and covenants with the private sector, regions and municipalities;
  - (ii) The nature (actual or normalized) of the historical data used for the projections;
  - (iii) The assumptions used for all the important projection parameters, including in the sensitivity analysis;
  - (iv) The estimated total effect of its implemented and adopted PaMs;
  - (v) How its use of the Kyoto Protocol mechanisms is supplemental to domestic action;
  - (vi) Its cooperation with developing countries on technology transfer and research and development.

127. The ERT also recommends that the Netherlands include in its future annual submissions information on how it gives priority to the actions taken to implement its commitments under Article 3, paragraph 14, of the Kyoto Protocol.

128. The ERT encourages the Netherlands to undertake a number of improvements regarding the transparency and completeness of its reporting; the most important are that the Netherlands, in its next national communication:

- (a) Include further information on how industry, the building stock and the urban structure have influenced the country's GHG emission profile and trends;
- (b) Provide information on policies and practices which encourage activities that lead to higher levels of anthropogenic GHG emissions than would otherwise occur;
- (c) Improve the consistency and completeness of the information provided in the PaMs section, including estimates of the effects of all PaMs;
- (d) Compare the methodology and assumptions used for and the results of the GHG emission projections with those of the projections included in the previous national communication;
- (e) Further explain the GHG emission projections for the non-CO<sub>2</sub> GHGs.

#### **IV. Questions of implementation**

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

## Annex

### Documents and information used during the review

#### A. Reference documents

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

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

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

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

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

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

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

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

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

FCCC/IRR/2007/NLD. Report of the review of the initial report of the Netherlands. Available at <<http://unfccc.int/resource/docs/2007/irr/nld.pdf>>.

FCCC/IDR.4/NLD. Report of the centralized in-depth review of the fourth national communication of the Netherlands. Available at <<http://unfccc.int/resource/docs/2008/idr/nld04.pdf>>.

Fourth national communication of the Netherlands. Available at <[http://unfccc.int/resource/docs/natc/nld\\_nc4.pdf](http://unfccc.int/resource/docs/natc/nld_nc4.pdf)>.

Fifth national communication of the Netherlands. Available at <[http://unfccc.int/resource/docs/natc/nld\\_nc5.pdf](http://unfccc.int/resource/docs/natc/nld_nc5.pdf)>.

2011 greenhouse gas inventory submission of the Netherlands:

common reporting format tables available at

<[http://unfccc.int/files/national\\_reports/annex\\_i\\_ghg\\_inventories/national\\_inventories\\_submissions/application/zip/nld-2011-crf-15apr.zip](http://unfccc.int/files/national_reports/annex_i_ghg_inventories/national_inventories_submissions/application/zip/nld-2011-crf-15apr.zip)>;

national inventory report available at

<[http://unfccc.int/files/national\\_reports/annex\\_i\\_ghg\\_inventories/national\\_inventories\\_submissions/application/zip/nld-2011-nir-15apr.zip](http://unfccc.int/files/national_reports/annex_i_ghg_inventories/national_inventories_submissions/application/zip/nld-2011-nir-15apr.zip)>;

supplementary information under the Kyoto Protocol available at

<[http://unfccc.int/files/national\\_reports/annex\\_i\\_ghg\\_inventories/national\\_inventories\\_submissions/application/zip/nld-2011-sef-16feb.zip](http://unfccc.int/files/national_reports/annex_i_ghg_inventories/national_inventories_submissions/application/zip/nld-2011-sef-16feb.zip)> and

<[http://unfccc.int/files/national\\_reports/annex\\_i\\_ghg\\_inventories/national\\_inventories\\_submissions/application/zip/nld-2011-kplulucf-15apr.zip](http://unfccc.int/files/national_reports/annex_i_ghg_inventories/national_inventories_submissions/application/zip/nld-2011-kplulucf-15apr.zip)>.

**B. Additional information provided by the Party**

Responses to questions during the review and additional material on updated policies and measures, greenhouse gas projections, the national registry and recent climate policy developments in the Netherlands were received from: Mr. Dirk Both, Mr. Arnoud Smit and Mr. Harry Vreuls (NL Agency, Ministry of Economic Affairs, Agriculture and Innovation); Mr. Sander Franse and Mr. Klaas-Jan Koops (Ministry of Infrastructure and the Environment); and a number of experts from the Dutch Government, knowledge institutes, business associations and non-governmental organizations.

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