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Report on the technical review of the eighth national communication and the technical review of the fifth biennial report of the Kingdom of the Netherlands

Parties included in Annex I to the Convention were requested by decision 6/CP.25 to submit their eighth national communication to the secretariat by no later than 31 December 2022. According to decision 15/CMP.1, Parties included in Annex I to the Convention that are also Parties to the Kyoto Protocol are required to include in their national communications supplementary information under Article 7, paragraph 2, of the Kyoto Protocol. This report presents the results of the technical review of the eighth national communication and relevant supplementary information under the Kyoto Protocol of the Kingdom of the Netherlands, conducted by an expert review team in accordance with the “Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention” and the “Guidelines for review under Article 8 of the Kyoto Protocol”.

Developed country Parties were requested by decision 6/CP.25 to submit their fifth biennial report to the secretariat by no later than 31 December 2022. This report presents the results of the technical review of the fifth biennial report of the Kingdom of the Netherlands, conducted by an expert review team in accordance with the “Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention”.

The review of these submissions took place in The Hague, Kingdom of the Netherlands, from 13 to 17 March 2023.



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Abbreviations and acronyms

AEA	annual emission allocation
AR	Assessment Report of the Intergovernmental Panel on Climate Change
BR	biennial report
CCS	carbon dioxide capture and storage
CH ₄	methane
CO ₂	carbon dioxide
CO ₂ eq	carbon dioxide equivalent
CTF	common tabular format
ERT	expert review team
ERU	emission reduction unit
ESD	European Union effort-sharing decision
ESR	European Union effort-sharing regulation
EU	European Union
EU ETS	European Union Emissions Trading System
GDP	gross domestic product
GHG	greenhouse gas
GWP	global warming potential
HFC	hydrofluorocarbon
IE	included elsewhere
IPCC	Intergovernmental Panel on Climate Change
IPPU	industrial processes and product use
LDC	least developed country
LDCF	Least Developed Countries Fund
LULUCF	land use, land-use change and forestry
N ₂ O	nitrous oxide
NA	not applicable
NC	national communication
NE	not estimated
NF ₃	nitrogen trifluoride
NO	not occurring
non-Annex I Party	Party not included in Annex I to the Convention
OECD	Organisation for Economic Co-operation and Development
PaMs	policies and measures
PFC	perfluorocarbon
reporting guidelines for supplementary information	“Guidelines for the preparation of the information required under Article 7 of the Kyoto Protocol. Part II: Reporting of supplementary information under Article 7, paragraph 2”
SF ₆	sulfur hexafluoride
UNFCCC reporting guidelines on BRs	“UNFCCC biennial reporting guidelines for developed country Parties”
UNFCCC reporting guidelines on CTF tables	“Common tabular format for ‘UNFCCC biennial reporting guidelines for developed country Parties’”
UNFCCC reporting guidelines on NCs	“Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications”
WAM	‘with additional measures’
WEM	‘with measures’

I. Introduction and summary

A. Introduction

1. This is a report on the in-country technical review of the NC8 and BR5 of the Kingdom of the Netherlands. The review was organized by the secretariat in accordance with the “Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention”, particularly “Part IV: UNFCCC guidelines for the technical review of biennial reports from Parties included in Annex I to the Convention” and “Part V: UNFCCC guidelines for the technical review of national communications from Parties included in Annex I to the Convention” (annex to decision 13/CP.20), and the “Guidelines for review under Article 8 of the Kyoto Protocol” (annex to decision 22/CMP.1 and annex I to decision 4/CMP.1).

2. In accordance with decision 13/CP.20, a draft version of this report was transmitted to the Government of the Kingdom of the Netherlands, which provided comments that were considered and incorporated, as appropriate, with revisions into this final version of the report.

3. The review was conducted from 13 to 17 March 2023 in The Hague, Kingdom of the Netherlands, by the following team of nominated experts from the UNFCCC roster of experts: Benise Nissa Joseph (Saint Lucia), Noura Mohamed Lotfy (Egypt), Jan Christoph Nill (EU), Vishwa Bandhu Pant (India) and Kristina Saarinen (Finland). Vishwa Bandhu Pant and Kristina Saarinen were the lead reviewers. The review was coordinated by Nalin Srivastava and Soheli Pasha (secretariat).

B. Summary

4. The ERT conducted a technical review of the information reported in the NC8 of the Kingdom of the Netherlands in accordance with the UNFCCC reporting guidelines on NCs,¹ the reporting guidelines for supplementary information, in particular the supplementary information required under Article 7, paragraph 2, and on the minimization of adverse impacts under Article 3, paragraph 14, of the Kyoto Protocol² and of the information reported in the BR5 of the Kingdom of the Netherlands in accordance with the UNFCCC reporting guidelines on BRs.³

1. Timeliness

5. The NC8 was submitted on 2 December 2022, before the deadline of 31 December 2022 mandated by decision 6/CP.25.

6. The BR5 was also submitted on 2 December 2022, before the deadline of 31 December 2022 mandated by decision 6/CP.25. The CTF tables were also submitted on 2 December 2022. The CTF tables were resubmitted on 27 March 2023 to address issues raised during the review. The resubmission included changes to CTF tables 2(e)I, 3, 4, 6(a), 6(c) and 7(b). Unless otherwise specified, the information and values from the latest submission are used in this report.

2. Completeness, transparency of reporting and adherence to the reporting guidelines

7. Issues and gaps identified by the ERT related to the information reported by the Kingdom of the Netherlands in its NC8 are presented in tables 1–2. The information reported, including the supplementary information under the Kyoto Protocol, mostly adheres to the UNFCCC reporting guidelines on NCs. The ERT concludes that the issues of a mandatory nature related to supplementary information under the Kyoto Protocol do not influence the

¹ Decision 6/CP.25, annex.

² Decision 15/CMP.1, annex, and decision 3/CMP.11, annex III.

³ Decision 2/CP.17, annex.

Party's ability to fulfil its commitments for the second commitment period of the Kyoto Protocol.

8. The Kingdom of the Netherlands made improvements to the reporting in its NC8 compared with that in its NC7, including by addressing recommendations and encouragements from the previous review report. The ERT noted that the Party has improved:

(a) The transparency of the GHG inventory information reported by providing emission intensity indicators by GDP and per capita;

(b) The transparency of the information reported on PaMs by including, as appropriate, quantified impacts for a specific year rather than aggregated impacts over a period of time;

(c) The transparency of the information reported on projections and the overall effects of PaMs by presenting projections with recent inventory data, describing the modelling approach used for each sector and providing the results of sensitivity analyses;

(d) The transparency of the information reported on financial, technological and capacity-building support by providing detailed information on how financial resources are determined as “new and additional” and how it is ensured that funding provided effectively addresses the needs of developing countries;

(e) The transparency of the information reported on research and systematic observation by including regional information on actions taken to support capacity-building in developing countries;

(f) The completeness of the supplementary information related to the Kyoto Protocol reported by providing information on how PaMs are implemented in such a way as to minimize the adverse effects of climate change and on the impact of PaMs on international trade, as well as the transparency of that information by providing information on the current and planned use of credits towards meeting commitments under the second commitment period of the Kyoto Protocol.

Table 1

Assessment of completeness and transparency of mandatory information reported by the Kingdom of the Netherlands in its eighth national communication

<i>Section of NC</i>	<i>Completeness</i>	<i>Transparency</i>	<i>Reference to description of recommendations</i>
Executive summary	Complete	Transparent	–
National circumstances relevant to GHG emissions and removals	Complete	Transparent	–
GHG inventory	Complete	Transparent	–
PaMs	Complete	Transparent	–
Projections and the total effect of PaMs	Mostly complete	Mostly transparent	Issues 1 and 4 in table I.2
Vulnerability assessment, climate change impacts and adaptation measures	Complete	Transparent	–
Financial resources and transfer of technology	Mostly complete	Transparent	Issues 1–2 in table I.3
Research and systematic observation	Complete	Mostly transparent	Issue 1 in table I.4
Education, training and public awareness	Complete	Transparent	–

Note: A list of recommendations pertaining to the completeness and transparency issues identified in this table is included in annex I. The assessment of completeness and transparency by the ERT in this table is based only on the “shall” reporting requirements.

Table 2

Assessment of completeness and transparency of mandatory supplementary information under the Kyoto Protocol reported by the Kingdom of the Netherlands in its eighth national communication

<i>Supplementary information under the Kyoto Protocol</i>	<i>Completeness</i>	<i>Transparency</i>	<i>Reference to description of finding(s)</i>
National system	Complete	Transparent	–
National registry	Complete	Transparent	–
Supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17	Complete	Transparent	–
PaMs in accordance with Article 2	Complete	Transparent	–
Domestic and regional programmes and/or arrangements and procedures	Mostly complete	Mostly transparent	Issues 1–2 in table I.5
Information under Article 10 ^a	Complete	Transparent	–
Financial resources	Mostly complete	Transparent	Issue 3 in table I.5
Minimization of adverse impacts in accordance with Article 3, paragraph 14	Complete	Transparent	–

Note: A list of findings pertaining to the completeness and transparency issues identified in this table is included in annex I. The assessment of completeness and transparency by the ERT in this table is based only on the “shall” reporting requirements.

^a The assessment refers to information provided by the Party on the provisions contained in Article 4, paras. 3, 5 and 7, of the Convention, as reported under Article 10 of the Kyoto Protocol, which is relevant to Parties included in Annex II to the Convention only. An assessment of the information on the other provisions of Article 10 of the Kyoto Protocol is provided under the relevant substantive headings under the Convention, for example research and systematic observation.

9. Issues and gaps identified by the ERT related to the reported information by the Kingdom of the Netherlands in its BR5 are presented in table 3. The information reported mostly adheres to the UNFCCC reporting guidelines on BRs. The ERT notes that issue 1 in table II.5 has been identified in three or more successive reviews.

10. The Kingdom of the Netherlands made improvements to the reporting in its BR5 compared with that in its BR4, including by addressing the recommendations and encouragements from the previous review report. The ERT noted that the Party has improved:

(a) The transparency of the information reported on its quantified economy-wide emission reduction target and related assumptions, conditions and methodologies by reporting in narrative format information on the inclusion of emissions from outgoing flights;

(b) The completeness of the information reported on PaMs by including information on all major new, implemented and planned PaMs, and the transparency of that information by ensuring that a different name was used for all PaMs reported;

(c) The transparency of the information reported on projections by describing which PaMs are considered under the WEM and WAM scenarios, including PaMs for F-gases;

(d) The transparency of the information reported on how it is ensured that resources provided effectively address the needs of non-Annex I Parties with regard to climate change adaptation and mitigation.

Table 3

Summary of completeness and transparency of mandatory information reported by the Kingdom of the Netherlands in its fifth biennial report

<i>Section of BR</i>	<i>Completeness</i>	<i>Transparency</i>	<i>Reference to description of finding(s)</i>
GHG emissions and removals	Complete	Transparent	–
Quantified economy-wide emission reduction target and related assumptions, conditions and methodologies	Complete	Mostly transparent	Issue 1 in table II.1
Progress in achievement of targets	Mostly complete	Mostly transparent	Issues 1–2 in table II.2 Issues 1–2 in table II.3 Issue 1 in table II.4
Provision of support to developing country Parties	Mostly complete	Transparent	Issues 1–2 in table II.5

Note: A list of findings pertaining to the completeness and transparency issues identified in this table is included in annex II. The assessment of completeness and transparency by the ERT in this table is based only on the “shall” reporting requirements.

11. The CTF tables resubmissions made during the review improved:

(a) The information reported on PaMs by including the notation key “NE” to report the estimates of the impacts of mitigation actions for 2020 and by explaining that “NE” stands for “not estimated” in a custom footnote in CTF table 3;

(b) The information reported on financial, technological and capacity-building support by clarifying the methodology used for converting the amounts shown in euros into United States dollars in CTF table 7(b).

II. Technical review of the information reported in the eighth national communication and fifth biennial report

A. National circumstances relevant to greenhouse gas emissions and removals

1. Technical assessment of the reported information

12. The NC8 contains key data on legislation, population trends, geography and land use, climate and climate change, economic developments, energy, transport, the buildings sector, industry, trade, the services sector, agriculture, forestry, resource efficiency and wastewater.

13. Between 1990 and 2021, the population increased from around 14.9 million to 17.5 million, although the growth rate decreased from 0.8 per cent in 1980–2000 to 0.4 per cent in 2020, with the lowest figure, 0.15 per cent, recorded in 2006. The growth rate is expected to decrease further, potentially approaching zero by 2050.

14. The Kingdom of the Netherlands is a densely populated country, with the population density having increased from 439 people per km² in 1990 to 519 people per km² in 2021. It is also seeing a decrease in the number of people per household, from 2.5 in 1990 to 2.3 in 2000 and 2.1 in 2021, resulting in an increase in the number of households, from 6.1 million in 1990 to 8.0 million in 2021, including a rise in the share of single-person households, from 30 to 39 per cent, in the same period. This is resulting in higher demand for housing and land for constructing new dwellings and infrastructure.

15. Natural gas has traditionally been a key energy source for the Kingdom of the Netherlands. In recent years, its production has been scaled back owing to earthquakes in the main production region, meaning that the country is now a net importer rather than exporter of natural gas. It is also making progress in constructing offshore wind farms, with 2.5 GW

offshore wind capacity installed in 2021 and preparations under way to increase this capacity to 21 GW by 2030.

16. Primary energy use in the Kingdom of the Netherlands declined from 3,394 PJ in 2004 to 3,051 PJ in 2021. Natural gas, oil and oil products, and coal account for 42, 36 and 8 per cent respectively of its primary energy consumption, with about 86 per cent stemming from fossil fuels.

17. Despite a growing economy and population, GHG emissions in the Party are decreasing owing to a range of factors (see para. 19 below), leading to a downwards trend in GHG emissions per capita and GHG emissions intensity per unit of GDP.

2. Assessment of adherence to the reporting guidelines

18. The ERT assessed the information reported in the NC8 of the Kingdom of the Netherlands and recognized that the reporting is complete and transparent, and thus adheres to the UNFCCC reporting guidelines on NCs. There were no issues raised during the review relating to the topics discussed in this chapter of the review report.

B. Greenhouse gas inventory information⁴

1. Technical assessment of the reported information

19. The Kingdom of the Netherlands reported information in its BR5 and NC8 on its historical GHG emissions and inventory arrangements. Total GHG emissions⁵ excluding emissions and removals from LULUCF decreased by 25.5 per cent between 1990 and 2020, while total GHG emissions including net emissions or removals from LULUCF decreased by 25.8 per cent over the same period. Emissions peaked in 1996 (including LULUCF and indirect emissions) and decreased thereafter. The changes in total emissions were driven mainly by factors such as a significant reduction in non-CO₂ industry emissions stemming from the implementation of the EU ETS; measures to increase building insulation; an increase in the use of highly efficient boilers; policies in the transport sector; and a significant reduction in the amount of solid waste sent to landfill. Total GHG emissions in the Party decreased by 8.8 per cent in 2020 compared with 2019, owing mainly to, inter alia, a fall in coal combustion, an increase in the use of renewable energy sources for energy and heat production and a reduction in total energy consumption and vehicle use stemming from the measures imposed during the coronavirus disease 2019 pandemic.

20. Table 4 illustrates the emission trends by sector and by gas for the Kingdom of the Netherlands. The emissions reported in the 2022 annual submission are the same as those reported in CTF table 1.

Table 4

Greenhouse gas emissions by sector and by gas for the Kingdom of the Netherlands for 1990–2020

Sector	GHG emissions (kt CO ₂ eq)					Change (%)		Share (%)	
	1990	2000	2010	2019	2020	1990–2020	2019–2020	1990	2020
	1. Energy	158 560.85	166 971.53	178 774.97	149 671.92	134 763.41	–15.0	–10.0	72.2
A1. Energy industries	53 364.11	64 645.27	67 558.59	57 125.17	47 832.85	–10.4	–16.3	24.3	29.2
A2. Manufacturing industries and construction	34 496.45	27 980.96	27 807.55	26 571.41	27 266.73	–21.0	2.6	15.7	16.6
A3. Transport	28 016.45	32 982.35	34 768.45	30 881.51	26 328.74	–6.0	–14.7	12.8	16.1

⁴ GHG emission data in this section are based on the Kingdom of the Netherlands' 2022 annual inventory submission, version 1.0, which has not yet been subject to review. All emission data in subsequent chapters are based on the Party' BR5 CTF tables unless otherwise noted.

⁵ In this report, the term "total GHG emissions" refers to the aggregated national GHG emissions expressed in terms of CO₂ eq excluding LULUCF and including indirect CO₂ emissions, unless otherwise specified.

	GHG emissions (kt CO ₂ eq)					Change (%)		Share (%)	
	1990	2000	2010	2019	2020	1990–2020	2019–2020	1990	2020
	A4. and A5. Other	39 855.49	40 075.64	46 663.81	33 570.94	31 980.33	–19.8	–4.7	18.1
B. Fugitive emissions from fuels	2 828.34	1 287.32	1 976.58	1 522.89	1 354.74	–52.1	–11.0	1.3	0.8
C. CO ₂ transport and storage	NO	NO	NO	NO	NO	NA	NA	NA	NA
2. IPPU	22 346.70	20 739.11	10 697.32	9 569.50	8 765.41	–60.8	–8.4	10.2	5.3
3. Agriculture	24 511.96	20 038.36	17 512.75	17 719.06	17 654.20	–28.0	–0.4	11.2	10.8
4. LULUCF	5 768.95	5 172.44	4 925.97	3 583.13	3 531.27	–38.8	–1.4	NA	NA
5. Waste	14 177.03	9 756.21	4 598.19	2 877.17	2 732.16	–80.7	–5.0	6.5	1.7
6. Other ^a	NO	NO	NO	NO	NO	NA	NA	NA	NA
<i>Gas^b</i>									
CO ₂	161 806.92	171 082.23	181 526.73	153 032.81	137 849.52	–14.8	–9.9	73.7	84.1
CH ₄	31 834.84	24 196.81	19 359.14	17 219.19	16 967.60	–46.7	–1.5	14.5	10.4
N ₂ O	17 478.90	15 487.26	8 150.00	7 915.90	7 754.30	–55.6	–2.0	8.0	4.7
HFCs	5 606.33	4 608.46	2 128.77	1 434.93	1 151.94	–79.5	–19.7	2.6	0.7
PFCs	2 662.85	1 902.81	313.77	117.69	67.24	–97.5	–42.9	1.2	0.0
SF ₆	206.70	227.64	104.83	117.15	124.58	–39.7	6.3	0.1	0.1
NF ₃	NO, IE	NO, IE	NO, IE	NO, IE	NO, IE	NA	NA	NA	NA
Total GHG emissions excluding LULUCF	219 596.54	217 505.21	211 583.23	179 837.65	163 915.18	–25.4	–8.9	100.0	100.0
Total GHG emissions including LULUCF	225 365.49	222 677.66	216 509.20	183 420.78	167 446.45	–25.7	–8.7	NA	NA
Total GHG emissions excluding LULUCF, including indirect CO₂	220 513.73	218 036.77	212 041.44	180 268.78	164 334.50	–25.5	–8.8	NA	NA
Total GHG emissions including LULUCF, including indirect CO₂	226 282.68	223 209.22	216 967.41	183 851.91	167 865.77	–25.8	–8.7	NA	NA

Source: GHG emission data: The Kingdom of the Netherlands' 2022 annual inventory submission, version 1.0.

^a Emissions and removals reported under the sector other (sector 6) are not included in total GHG emissions.

^b Emissions by gas without LULUCF and excluding indirect CO₂.

21. In brief, the Kingdom of the Netherlands' national inventory arrangements were established in accordance with legislation under which the Ministry of Economic Affairs and Climate Policy appointed the Netherlands Enterprise Agency as the single national entity responsible for preparing the national GHG inventory; compiling and issuing national inventory reports to the secretariat; coordinating the quality assurance/quality control process; and acting as a focal point for the UNFCCC. There have been no changes in these arrangements since the BR4.

2. Assessment of adherence to the reporting guidelines

22. The ERT assessed the information reported in the NC8 and BR5 of the Kingdom of the Netherlands and recognized that the reporting is complete and transparent, and thus adheres to the UNFCCC reporting guidelines on NCs and the UNFCCC reporting guidelines on BRs. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

3. National system for the estimation of anthropogenic emissions by sources and removals by sinks

(a) Technical assessment of the reported information

23. The Kingdom of the Netherlands provided in the NC8 a description of how its national system for the estimation of anthropogenic emissions by sources and removals by sinks of

all GHGs not controlled by the Montreal Protocol is performing the general and specific functions defined in the annex to decision 19/CMP.1 in conjunction with decisions 3/CMP.11 and 4/CMP.11. The description includes all the elements mandated by paragraph 30 of the annex to decision 15/CMP.1. The NC8 also contains a reference to the description of the national system provided in the national inventory report of the 2022 annual submission. The ERT took note of the review of the changes to the national system reflected in the report on the individual review of the 2022 annual submission of the Kingdom of the Netherlands.

(b) Assessment of adherence to the reporting guidelines

24. The ERT assessed the information reported in the NC8 of the Kingdom of the Netherlands and recognized that the reporting is complete and transparent, and thus adheres to the reporting guidelines for supplementary information. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

4. National registry

(a) Technical assessment of the reported information

25. In its NC8 the Kingdom of the Netherlands provided information on how its national registry performs the functions in accordance with the annex to decision 13/CMP.1 in conjunction with decision 3/CMP.11 and the annex to decision 5/CMP.1 and complies with the requirements of the technical standards for data exchange between registry systems. The ERT took note of the review of the changes to the national registry reflected in the report on the individual review of the 2022 annual submission of the Kingdom of the Netherlands.

(b) Assessment of adherence to the reporting guidelines

26. The ERT assessed the information reported in the NC8 of the Kingdom of the Netherlands and recognized that the reporting is complete and transparent, and thus adheres to the reporting guidelines for supplementary information. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

C. Quantified economy-wide emission reduction target and related assumptions, conditions and methodologies

1. Technical assessment of the reported information

27. The Kingdom of the Netherlands reported information on its economy-wide emission reduction target in its BR5. For the Kingdom of the Netherlands the Convention entered into force on 21 March 1994. Under the Convention the Party committed to contributing to the achievement of the joint EU economy-wide emission reduction target of 20 per cent below the 1990 level by 2020.

28. The target for the EU and its member States is formalized in the EU 2020 climate and energy package. The legislative package regulates emissions of CO₂, CH₄, N₂O, HFCs, PFCs and SF₆ using GWP values from the AR4 to aggregate the GHG emissions of the EU until 2020. Emissions and removals from the LULUCF sector are not included in the quantified economy-wide emission reduction target under the Convention.

29. The EU-wide targets are primarily implemented through the EU ETS and ESD. The EU ETS covers mainly point emissions sources in the energy, industry and aviation sectors. An EU-wide emission cap was put in place for 2013–2020 for the EU ETS with the goal of reducing emissions by 21 per cent below the 2005 level by 2020. For 2030, a reduction target of 62 per cent below the 2005 level has been set for emissions covered by the EU ETS. The ESD became operational in 2013 and covers sectors outside the EU ETS, including transport (excluding aviation and international maritime transport), residential and commercial buildings, agriculture, small industry and waste. The ESD is regulated through targets for each member State that add up to a reduction at the EU level of 10 per cent below the 2005 level by 2020. The ESR, the successor to the ESD, was adopted in 2018 and amended in 2023

with the target of reducing emissions covered under the ESR by 40 per cent below the 2005 level by 2030.

30. The EU generally allows its member States to use units from the Kyoto Protocol mechanisms for compliance purposes, subject to a number of restrictions in terms of origin and type of project and up to an established limit. Operators and airline operators can use such units to fulfil their requirements under the EU ETS, and member States can use such units for their national ESD targets, within specific limitations.

31. The European Commission set out its vision for a climate-neutral EU in November 2018, and in December 2019 presented the European Green Deal as a road map with actions for making the EU economy sustainable. The European Council endorsed in December 2019 the objective of making the EU climate-neutral by 2050. As part of the European Green Deal, the 2050 climate-neutrality target was made binding in the first European Climate Law, adopted in 2021. It also increased the ambition of the 2030 emission reduction target to at least 55 per cent below the 1990 level. Member States will set out any increased ambition in the update of their national energy and climate plans.

32. The Kingdom of the Netherlands has a national target of reducing its emissions to 16 per cent below the 2005 level by 2020 for ESD sectors. This target has been translated into binding quantified AEAs for 2013–2020. The Party’s AEAs change following a linear path from 122,948.13 kt CO₂ eq in 2013 to 107,362.87 kt CO₂ eq in 2020.⁶ Under the ESR, the Party has a national target of reducing emissions from covered sectors to 36 per cent below the 2005 level by 2030.

33. A proposal in the 2022 government coalition agreement to align the Climate Act with the European Climate Law and include new targets (reducing GHG emissions by at least 55 per cent below the 1990 level by 2030 and achieving carbon neutrality by 2050) is being considered by the Dutch parliament.

2. Assessment of adherence to the reporting guidelines

34. The ERT assessed the information reported in the BR5 of the Kingdom of the Netherlands and identified issues relating to completeness and transparency, and thus adherence to the UNFCCC reporting guidelines on BRs. The findings are described in table II.1.

D. Information on policies and measures

1. Technical assessment of the reported information

35. The Kingdom of the Netherlands provided in its NC8 and BR5 information on its PaMs⁷ implemented, adopted and planned to fulfil its commitments under the Convention. The Party’s set of PaMs is similar to that previously reported, with a few exceptions. During the review, the Party provided additional information on all PaMs, including changes in the status of the previously reported PaMs. The NC8 also provides information on PaMs no longer in place, namely the Decree on Emission Standards for Medium-Sized Combustion Plants, which expired in 2012; the 2013 Energy Agreement; the long-term agreements on energy efficiency in industry; the Agro Covenant and the Local Climate Agenda, which expired in 2020; the financial scheme of postal code area cooperative projects, which ended in 2021; and financial insurance for geothermal energy installations, which expired in 2022.

36. The Kingdom of the Netherlands reported on its policy context and legal and institutional arrangements in place for implementing its commitments and monitoring and evaluating the effectiveness of its PaMs. The Netherlands Enterprise Agency is responsible for climate policy monitoring and for coordinating and submitting reports to the EU and the

⁶ According to the EU transaction log.

⁷ The UNFCCC reporting guidelines on BRs use the term “mitigation actions”, whereas the UNFCCC reporting guidelines on NCs use the term “policies and measures”. The terms are used interchangeably in this report to refer to the relevant information in either the NC or BR.

UNFCCC, while the Netherlands Environmental Assessment Agency⁸ has overall responsibility for the development and annual publication of projections in the form of the annual climate and energy outlook report, which the Government includes in its report to the parliament every year.

37. The Kingdom of the Netherlands did not provide information in its NC8 or BR5 on changes to institutional arrangements since the last submissions. During the review, the Party described the following legislative changes, explaining that no significant changes have occurred since 2017:

(a) The adoption of the Climate Act in 2019, which provides the legal basis for evaluating and reporting on progress towards achieving national climate targets, and as a result of which the Social and Economic Council Standing Committee, which was responsible for this work, is no longer in place;

(b) The adoption of the Environment and Planning Act in 2016, which is scheduled to enter into force in July 2023 and is aimed at combining and modernizing various related pieces of legislation in the fields of the environment, nature and spatial planning, and the National Strategy on Spatial Planning and the Environment, which is included as an instrument to this Act and provides a long-term vision on the future development of the environment of the Kingdom of the Netherlands, both the built environment and the natural environment.

38. The Party's assessment of the economic and social consequences of its response measures includes information on its support for international climate action in developing countries. This support is part of its development cooperation policy and has a strong focus on areas that include reducing poverty, providing access to renewable energy, halting deforestation and promoting climate resilience through climate-smart agriculture and integrated water resource management.

39. The Party reported that its actions to identify and review its own policies and practices that encourage activities that lead to greater levels of emissions (such as energy taxation, which may increase emissions owing to regressive tariffs and various exemptions) include a Government review of possible indirect financial incentives for fossil fuels.

40. In its reporting on PaMs, the Kingdom of the Netherlands did not quantify the impact of individual PaMs separately but rather grouped them by sector: electricity, industry, buildings, transport, agriculture and LULUCF. The Party explained during the review that impacts were not provided separately because it was often not possible or meaningful to distinguish the impacts of individual instruments and programmes that focus on the same emissions source or activity, as those impacts are often the result of multiple rather than individual PaMs. The Party also explained that this approach considerably reduces the double counting of impacts.

41. The Party described in its NC8 and during the review its general methodology for estimating the impacts of its PaMs, which involves using the projections from the *Climate and Energy Outlook of the Netherlands 2022* and a baseline scenario to estimate the impacts of PaMs for individual sectors.

42. The key overarching related cross-sectoral policy in the EU is the 2020 climate and energy package, adopted in 2009, which includes the revised EU ETS and the ESD. The package is supplemented by renewable energy and energy efficiency legislation and legislative proposals on the 2020 targets for CO₂ emissions from cars and vans, the carbon capture and storage directive, and the general programmes for environmental conservation, namely the 7th Environment Action Programme and the clean air policy package. The 2021 European Climate Law, which forms part of the European Green Deal, made climate neutrality by 2050 legally binding and raised the EU-wide 2030 emission reduction target to at least 55 per cent compared with the 1990 level. In 2023, the European Parliament adopted a series of legislative proposals, collectively referred to as Fit for 55, intended to help achieve the new 2030 target. These new regulations strengthened both the ESR and EU ETS 2030

⁸ In cooperation with Statistics Netherlands, TNO Energy Transition, the National Institute for Public Health and the Environment and the Netherlands Enterprise Agency.

targets, extended the EU ETS to include maritime shipping in 2024 and established the Social Climate Fund to address equitability of mitigation impacts. The regulations also created the EU ETS 2 to cover at the point of distribution most fuel used in sectors not covered by the EU ETS, beginning in 2027.

43. The 2021–2030 EU-wide policies are operationalized through the national energy and climate plans of EU member States, which should set out national objectives for each of the five dimensions of the Energy Union, namely energy security; the internal energy market; energy efficiency; decarbonization; and research, innovation and competitiveness. The national energy and climate plans are periodically updated to reflect changes to EU policy, such as the implementation of the European Green Deal. The Party's national energy and climate plan sets the target of reducing GHG emissions by 49 per cent between 1990 and 2030. Measures envisaged to achieve that target include a grant scheme to incentivize energy producers to produce sustainable energy, renewable energy schemes and investment in sustainable energy infrastructure, as well as measures to achieve low-emission mobility, increasing energy efficiency in buildings, switching from low-calorific gas to other forms of energy, increasing the capacity of the domestic grid and increasing regional cooperation in relation to the international electricity network.

44. The Kingdom of the Netherlands introduced national-level policies to achieve its targets under the ESD and domestic emission reduction targets. The key policies reported include the 2019 National Climate Agreement as the country's main framework for climate policy. The Climate Act calls for a 49 per cent reduction in GHG emissions by 2030 and a 95 per cent reduction by 2050 compared with the 1990 level. The estimated mitigation effect of PaMs targeting the electricity sector (e.g. the energy tax on electricity and natural gas, the sustainable energy surcharge, the subsidy scheme to stimulate sustainable energy production and investment subsidies for small renewable energy systems) is the most significant, amounting to 21.3 Mt CO₂ eq in 2025. Other PaMs that have the potential to deliver significant emission reductions target the buildings sector (e.g. the Building Decree, the renovation acceleration programme and subsidy scheme for rental properties, the national insulation programme and the hybrid heat pump programme), with a total estimated mitigation impact of 4.5 Mt CO₂ eq in 2025; the transport sector (e.g. promotion of more efficient personal transport, electrification of vehicles and construction machinery, efficient logistics and sustainable fuels), with a total estimated mitigation impact of 2.6 Mt CO₂ eq in 2025; and the industry sector (e.g. CO₂ pricing, the energy investment tax allowance scheme, the sustainable infrastructure programme and regional industry clusters), with a total estimated mitigation impact of 2.0 Mt CO₂ eq in 2025.

45. The Party highlighted the domestic mitigation actions that are under development. In the energy sector these include a legislative proposal to facilitate transition from natural gas to sustainable alternatives for district heating, energy performance standards for rental accommodation and a subsidy scheme to facilitate renewable energy transition. In the industrial sector these include a programme on sustainable infrastructure for industry and a programme on agreements and projects of national importance pertaining to energy sources and the circular economy. In the transport sector these include a levy on vehicles transporting heavy goods and a subsidy to promote electric taxiing by aircraft. In the agriculture sector these include the Seventh Nitrates Directive Action Programme to reduce pollution caused by nitrates from agricultural sources, a measure to reduce protein in cattle feed, a national scheme to buy out ammonia-intensive livestock farms and measures to promote the development of low-methane concentrates with a lower emission factor. In the LULUCF sector these include a subsidy scheme to promote raising groundwater levels in peatland meadows and extensification of dairy farming in protected areas. In the waste sector these include an economic package to promote waste recycling. During the review, the Party reported that the Government has allocated an additional EUR 35 billion through the Climate Fund (2021–2030) for mitigation actions pertaining to nuclear energy, emission-free gas plants, the scaling-up of key enabling technologies such as hydrogen, hybrid energy infrastructure and the energy transition of the built environment. Table 5 provides a summary of the reported information on the PaMs of the Kingdom of the Netherlands.

Table 5
Summary of information on policies and measures reported by the Kingdom of the Netherlands

<i>Sector</i>	<i>Key PaMs</i>	<i>Estimated mitigation impact in 2020 (Mt CO₂ eq)</i>	<i>Estimated mitigation impact in 2025 (Mt CO₂ eq)</i>	<i>Estimated mitigation impact in 2030 (Mt CO₂ eq)</i>
Policy framework and cross-sectoral measures	EU ETS	NE	NE	NE
	Climate Act	NE	NE	NE
	National Climate Agreement	NE	NE	NE
Energy		NE	28.4	41.5
Energy efficiency	Environmental Protection Act (framework and obligations related to energy savings)	NE	IE	IE
	Building Decree	NE	IE	IE
	Renovation acceleration programme and subsidy scheme for rental properties	NE	IE	IE
Energy supply and renewable energy	Energy tax, including a sustainable energy surcharge	NE	IE	IE
	Subsidy scheme for stimulation of sustainable energy production	NE	IE	IE
	Investment subsidies for small renewable energy systems	NE	IE	IE
Transport	Promotion of more efficient personal transport	NE	IE	IE
	Electrification of vehicles and construction machinery	NE	IE	IE
	Efficient logistics	NE	IE	IE
IPPU		NE	2.0	3.5
	Energy investment tax allowance scheme	NE	IE	IE
	Energy savings covenant	NE	IE	IE
Agriculture		NE	1.2	1.7
	Renewable energy in horticulture	NE	IE	IE
	Greenhouse as an Energy Source programme	NE	IE	IE
LULUCF		NE	0.3	0.6
	National research programme on peat areas and pilot projects on water management in peat areas	NE	IE	IE

Note: The estimated mitigation impacts are estimates of emissions of CO₂ eq avoided in a given year as a result of the implementation of mitigation actions, unless otherwise specified. The estimated mitigation impacts of individual mitigation actions for 2020 have not been estimated and those for 2025 and 2030 are included in the aggregate mitigation impacts for the various sectors.

46. The Party explained that information on the impacts of PaMs is only available for 2025 and 2030 and that it was not possible to perform ex post estimates of the impact of its PaMs on GHG emissions in 2020. The Government is, however, required by law to have its policies evaluated regularly by independent parties (usually consultants) about once every five years. Ex post evaluations of PaMs are performed every seven years by independent evaluators and the results are published at <https://www.rijksfinancien.nl/beleidsevaluatie>.

47. The Party reported on its 2022 climate policy brief to the parliament, which included information on progress towards implementing national climate targets gathered from the 2022 *Climate Policy Monitor* report of the Netherlands Enterprise Agency; expectations for meeting targets based on the *Climate and Energy Outlook of the Netherlands 2022*; and announcements of new policies or adjustments to existing ones. In addition, every two years, the Government evaluates the progress of the national energy and climate plans and proposes any necessary adjustments on the basis of findings in the annual *Climate Policy Monitor* reports and annual GHG emissions projections prepared by the Netherlands Environmental Assessment Agency.

48. The Kingdom of the Netherlands reported that it has earmarked funds from the EUR 20 billion National Growth Fund for constructing two new nuclear power plants and

promoting hydrogen production between 2021 and 2025; that, in the agriculture sector, the Government has announced a EUR 25 billion Transition Fund for Rural Areas and Nature to decrease GHG emissions and air pollutants, improve the health of the natural environment and strengthen water quality; that the budget of the Stimulation of Sustainable Energy Production and Climate Transition incentive scheme has increased substantially, from EUR 2 billion in 2011 to EUR 13 billion in 2022; and that, under the Research and Development (Promotion) Act, the Government allocated a budget of EUR 1.3 billion in 2022 to stimulating innovation in energy technologies, products and services.

2. Assessment of adherence to the reporting guidelines

49. The ERT assessed the information reported in the NC8 and BR5 of the Kingdom of the Netherlands and identified issues relating to completeness and transparency, and thus adherence to the UNFCCC reporting guidelines on NCs and the UNFCCC reporting guidelines on BRs. The findings are described in tables I.1 and II.2.

3. Domestic and regional programmes and legislative arrangements and procedures related to the Kyoto Protocol

(a) Technical assessment of the reported information

50. In its NC8 the Kingdom of the Netherlands reported that the implementation of the Kyoto Protocol is underpinned by the National Climate Agreement and national environmental legislation, namely the Environmental Management Act and the Environment and Planning Act. The overall responsibility for climate change policymaking lies with the Ministry of Economic Affairs and Climate Policy, and a number of national institutions are involved in policy implementation (see para. 36 above).

51. For the second commitment period of the Kyoto Protocol, from 2013 to 2020, the Party committed to contributing to the joint EU effort to reduce GHG emissions by 20 per cent below the base-year level (see paras. 27–29 above).

52. The Party has arrangements and enforcement procedures to meet its commitments under the Kyoto Protocol, including procedures for addressing non-compliance. These include enforcement of legal measures through the Environmental Management Act, which designates the authorities responsible for enforcement and requires those authorities to designate officials charged with monitoring compliance. In the event of violations, authorities have several sanction measures at their disposal: imposing a financial penalty on the violator or withdrawing their licence; or imposing criminal sanctions, including initiating criminal proceedings, which could result in high financial penalties or even imprisonment of up to six years.

53. The Kingdom of the Netherlands reported that it has provisions in place to make information on legislative arrangements and administrative procedures related to compliance and enforcement publicly accessible. Information on legislative arrangements is published in official government bulletins or directly on the Netherlands Enterprise Agency website⁹ in accordance with the Freedom of Information and Environmental Management Acts, which provide for public access to information on the enforcement of environmental rules and regulations.

54. The Party has national legislative arrangements and administrative procedures in place that seek to ensure that the implementation of activities under Article 3, paragraph 3, and any elected activities under Article 3, paragraph 4, of the Kyoto Protocol also contributes to the conservation of biodiversity and the sustainable use of natural resources. Most of the country's forested area, including newly planted forests, is managed according to the principles of sustainable forest management. During the review, the Party explained that the Forest Act and the Flora and Fauna Act, which ensured the sustainable management of forests and that negative impacts of management activities on biodiversity are minimized, expired at the end of 2016, and these Acts were replaced by the more recent and comprehensive Nature Conservation Act. The Party also explained that the Nature Conservation Act protects

⁹ <http://english.rvo.nl/nie>.

specific vulnerable regions, such as Natura 2000 areas, encompasses conservation rules for threatened species (including birds, insects and plants) and focuses on promoting diversity in the conservation and restoration of biotopes and habitats, including forests. The Party provided further details on how the Nature Conservation Act ensures conservation of biodiversity and the sustainable use of natural resources pertaining to forest management, such as by providing guidelines that include creating an inventory of the flora and fauna to be protected prior to taking measures, specifically avoiding vulnerable spots (e.g. bird nests, trees housing specific beetles, areas of hibernation for reptiles and habitats of badgers, foxes and beavers) and not carrying out work during breeding periods.

(b) Assessment of adherence to the reporting guidelines

55. The ERT assessed the information reported in the NC8 of the Kingdom of the Netherlands and identified issues relating to completeness and transparency, and thus adherence to the reporting guidelines for supplementary information. The findings are described in table I.5.

4. Policies and measures in accordance with Article 2 and minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol

(a) Technical assessment of the reported information

56. In the NC8 the Kingdom of the Netherlands reported information on how it strives to implement PaMs under Article 2 of the Kyoto Protocol in such a way as to minimize adverse effects, including the adverse effects of climate change and effects on international trade and social, environmental and economic impacts on other Parties, especially developing country Parties. These include efforts to develop low-carbon energy systems, improve energy efficiency and promote the sustainable use of biomass, such as by complying with the EU renewable energy directive and following a certification system. It is prohibited to use biomass that competes with food production. All forest biomass should be covered by forest management or long-term conservation or expansion of carbon stocks. In addition, the Party launched the Amsterdam Declarations Partnership to halt deforestation in supply chains of commodities such as timber, soy and palm oil. In international trade, the Party follows policies to promote energy efficiency, reduce use of fossil fuels, improve the insulation of buildings and decrease imports of natural gas and biomass from non-sustainably managed forests.

57. The NC8 includes information on how the Kingdom of the Netherlands promotes and implements the decisions of the International Civil Aviation Organization and the International Maritime Organization to limit emissions from aviation and marine bunker fuels. The Party reported that it was involved in the development and implementation of the EU ETS and the Single European Sky initiative and also supports the use of electric taxiing systems and the production of sustainable fuels and biofuels. To limit CO₂ emissions from aviation, the Government has also introduced a tax on passengers flying out of the country.

58. Further information on how the Kingdom of the Netherlands strives to implement its commitments under Article 3, paragraph 14, of the Kyoto Protocol in such a way as to minimize adverse social, environmental and economic impacts on developing country Parties was reported in the 2022 annual submission. This information is consistent with the information reported by the Party in its NC8 (see para. 56 above) The Party reported information on what it prioritized in implementing its commitments under Article 3, paragraph 14, including national actions and actions to provide support and assistance to developing countries on fiscal incentives, tax and duty exemptions, subsidies, energy price reforms and ensuring compliance of biofuel production with sustainability criteria.

(b) Assessment of adherence to the reporting guidelines

59. The ERT assessed the information reported in the NC8 of the Kingdom of the Netherlands and recognized that the reporting is complete and transparent, and thus adheres to the reporting guidelines for supplementary information. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

E. Estimates of emission reductions and removals and the use of units from market-based mechanisms and land use, land-use change and forestry and progress in achieving the quantified economy-wide emission reduction target

1. Technical assessment of the reported information

60. The Kingdom of the Netherlands reported in its BR5 (p.416) that it intends to use units from market-based mechanisms under the Kyoto Protocol and other market-based mechanisms to meet its commitment under the ESD. It reported in CTF tables 4 and 4(b) that it did not use any units from market-based mechanisms in 2019 or 2020. Given that the contribution of LULUCF activities is not included in the joint EU target under the Convention, reporting thereon is not applicable to the Party. Table 6 illustrates the Kingdom of the Netherlands' ESD emissions and use of units from market-based mechanisms for achieving its ESD target.

Table 6

Summary of information on emissions covered by the European Union effort-sharing decision annual emission allocation and use of units from market-based mechanisms by the Kingdom of the Netherlands

(kt CO₂ eq)

<i>Year</i>	<i>ESD emissions</i>	<i>AEA</i>	<i>Use of units from market-based mechanisms</i>	<i>AEAs transferred to (–) or from (+) other Parties</i>	<i>Annual AEA surplus/deficit</i>	<i>Cumulative AEA surplus/deficit</i>
2013	108 253.39	122 948.13	0.00	NA	14 694.74	14 694.74
2014	97 887.34	120 675.93	0.00	NA	22 788.59	37 483.33
2015	101 119.72	118 403.73	0.00	NA	17 284.01	54 767.34
2016	101 333.44	116 131.52	0.00	NA	14 798.08	69 565.42
2017	102 326.63	114 050.54	0.00	NA	11 723.91	81 289.34
2018	99 731.98	111 821.31	0.00	NA	12 089.33	93 378.67
2019	97 096.84	109 592.09	0.00	NA	12 495.25	105 873.92
2020	90 196.82	107 362.87	0.00	NA	17 166.04	123 039.96

Sources: The Kingdom of the Netherlands' BR5 and BR5 CTF table 4(b), information provided by the Party during the review and the EU transaction log (AEAs).

Note: For a given year, a positive number (surplus) indicates that annual or cumulative ESD emissions were lower than the corresponding AEA or cumulative AEAs, while a negative number (deficit) indicates that annual or cumulative ESD emissions were higher than the corresponding AEA or cumulative AEAs.

2. Assessment of adherence to the reporting guidelines

61. The ERT assessed the information reported in the BR5 of the Kingdom of the Netherlands and identified an issue relating to completeness and transparency, and thus adherence to the UNFCCC reporting guidelines on BRs. The findings are described in table II.3.

3. Assessment of achievement of the quantified economy-wide emission reduction target

62. In assessing the Party's contribution towards achievement of the 2020 joint EU target on the basis of the information reported in its BR5, the ERT noted that, under the EU 2020 climate and energy package, the Kingdom of the Netherlands committed to reducing its emissions under the ESD to 16 per cent below the 2005 level by 2020 (see para. 32 above). This target has been translated into binding quantified AEAs for 2013–2020. In 2020 the Party's ESD emissions were 16.0 per cent (17,166.04 kt CO₂ eq) below the AEA. The Party has a cumulative surplus of 123,039.96 kt CO₂ eq with respect to its AEAs between 2013 and 2020. The ERT noted that the Party did not make use of units from market-based mechanisms in 2020.

63. The ERT noted that the Party reported that the total GHG emissions excluding LULUCF of the EU and including the use of units from market-based mechanisms do not exceed the emission level corresponding to the target in 2020, and thus that the EU has achieved its joint target. See the report on the review of the NC8 and BR5 of the EU for

further details. Therefore, the ERT concluded that, on the basis of the information reported in the BR5, the Kingdom of the Netherlands has met its 2020 commitment under the Convention through its contribution to achieving the joint EU target. The ERT noted that the Party's ESD emissions in 2020 do not exceed its AEA for 2020.

F. Projections

1. Projections overview, methodology and results

(a) Technical assessment of the reported information

64. The Kingdom of the Netherlands reported in its BR5 and NC8 updated projections for 2030 relative to actual inventory data for 2020 under the WEM scenario. The WEM scenario reported by Party includes PaMs implemented and adopted until 1 May 2022.

65. In addition to the WEM scenario, the Kingdom of the Netherlands reported the WAM scenario. The WAM scenario includes planned PaMs capable of being modelled. The Party provided a definition of its scenarios, explaining that its WEM scenario includes policies such as the EU ETS, subsidies for renewable energy and the comprehensive set of binding measures included in the 2019 National Climate Agreement and 2022 National Climate Programme, while its WAM scenario includes in addition a limited number of EU policies that have been published but not yet implemented, such as revisions to the EU ETS and strengthened CO₂ standards for cars, and national policies, such as lower electricity taxes. The Party did not report a 'without measures' scenario, indicating that calculating it would be difficult and of a theoretical nature only. The definition indicates that the WEM and WAM scenarios were prepared in accordance with the UNFCCC reporting guidelines on BRs.

66. The projections are presented on a sectoral basis, using the same sectoral categories as those used in the reporting on mitigation actions, and on a gas-by-gas basis for CO₂, CH₄, N₂O, PFCs, HFCs and SF₆ (treating PFCs and HFCs collectively in each case) for 2030. It did not report projections for NF₃ separately. The projections are also provided in an aggregated format for each sector and for a Party total using GWP values from the AR4 (in the CTF tables) and the AR5 (in the NC8 and BR5). The Party reported on factors and activities affecting emissions for each sector. While projection results are presented in CTF table 6 in accordance with the GHG inventory sectors, the sectoral split used for projections presented in the NC8 follows the national sectoral split with a few differences, which mainly relate to electricity generation and industry. An explanation of the key differences is provided in the NC8 (p.160).

(b) Methodology, assumptions and changes since the previous submission

67. The methodology used for the preparation of the projections is identical to that used for the preparation of the emission projections for the NC7. The Party provided limited information on changes in the assumptions used for the projection scenarios since the submission of its NC7 but did report information further explaining the methodologies used for the projection scenarios. To prepare its projections, the Kingdom of the Netherlands primarily uses the National Energy Outlook Modelling System, which comprises a comprehensive set of models to simulate the different sectors of the economy and an energy system model to perform consistency checks. The sectoral models project GHG emissions based on projected energy demand and supply using assumptions related to energy prices, policies and technologies. The outputs of different sectoral models are then combined in an energy system model to check their validity and consistency across the national energy system. For projecting non-CO₂ and non-energy related CO₂ emissions, complementary sectoral and spreadsheet models are used.

68. To prepare its projections, the Kingdom of the Netherlands relied on key underlying assumptions relating to population, international energy prices (oil, gas and coal), EU ETS carbon prices, economic development indicators (GDP, sectoral gross value added, exchange rates, and passenger and freight transport statistics), number and size of households and number of livestock (cattle, pigs and poultry). The assumptions were updated on the basis of

the most recent economic developments known at the time of the preparation of the projections.

69. Sensitivity analyses were conducted for a number of important assumptions, such as GDP growth, population growth, fuel and CO₂ prices, rate of climate change and the effectiveness of specific policies arising from the National Climate Agreement. The results of all sensitivity analyses conducted were aggregated using the Monte Carlo method to derive an uncertainty range applicable to emission reductions for the total GHG emission projections in 2030 (–39 to –50 per cent relative to the 1990 level).

(c) Results of projections

70. The projected emission levels under different scenarios and information on the quantified economy-wide emission reduction target are presented in table 7 and 1.

Table 7

Summary of greenhouse gas emission projections for the Kingdom of the Netherlands

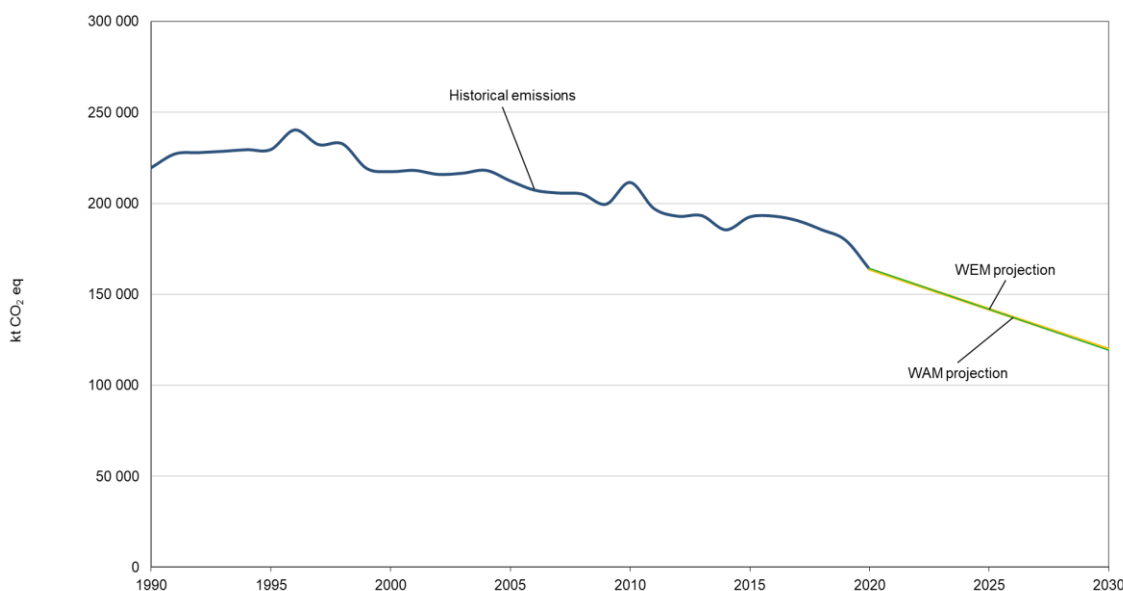
	<i>GHG emissions (kt CO₂ eq/year)</i>	<i>Change in relation to 1990 level (%)</i>	<i>Change in relation to 2020 level (%)</i>
Inventory data 1990	220 513.73	NA	NA
Inventory data 2020	164 334.50	–25.5	NA
WEM projections for 2030	119 617.12	–45.8	–27.2
WAM projections for 2030	119 314.18	–45.9	–27.4
WEM projections for 2035	111 833.75	–49.3	–31.9
WAM projections for 2035	110 744.64	–49.8	–32.6

Source: The Kingdom of the Netherlands’ BR5 and BR5 CTF table 6, and information provided during the review.

Note: The projections are of GHG emissions excluding LULUCF and including indirect CO₂. The GWP values used for the emissions are from the AR4.

Figure 1

Greenhouse gas emission projections reported by the Kingdom of the Netherlands



Sources: The Kingdom of the Netherlands’ BR5 and BR5 CTF tables 1 and 6 (total GHG emissions excluding LULUCF and including indirect CO₂).

71. The Kingdom of the Netherlands’ total GHG emissions excluding LULUCF and including indirect CO₂ are projected under the WEM scenario to decrease by 45.8 per cent below the 1990 level in 2030. When including LULUCF, total GHG emissions including indirect CO₂ are projected under the WEM scenario to decrease by 45.5 per cent below the 1990 level in 2030. Under the WAM scenario, emissions in 2030 are projected to be lower than those in 1990 by 45.9 per cent (excluding LULUCF). During the review, the Party provided additional information on GHG emissions for 2035, which are projected to be 49.3

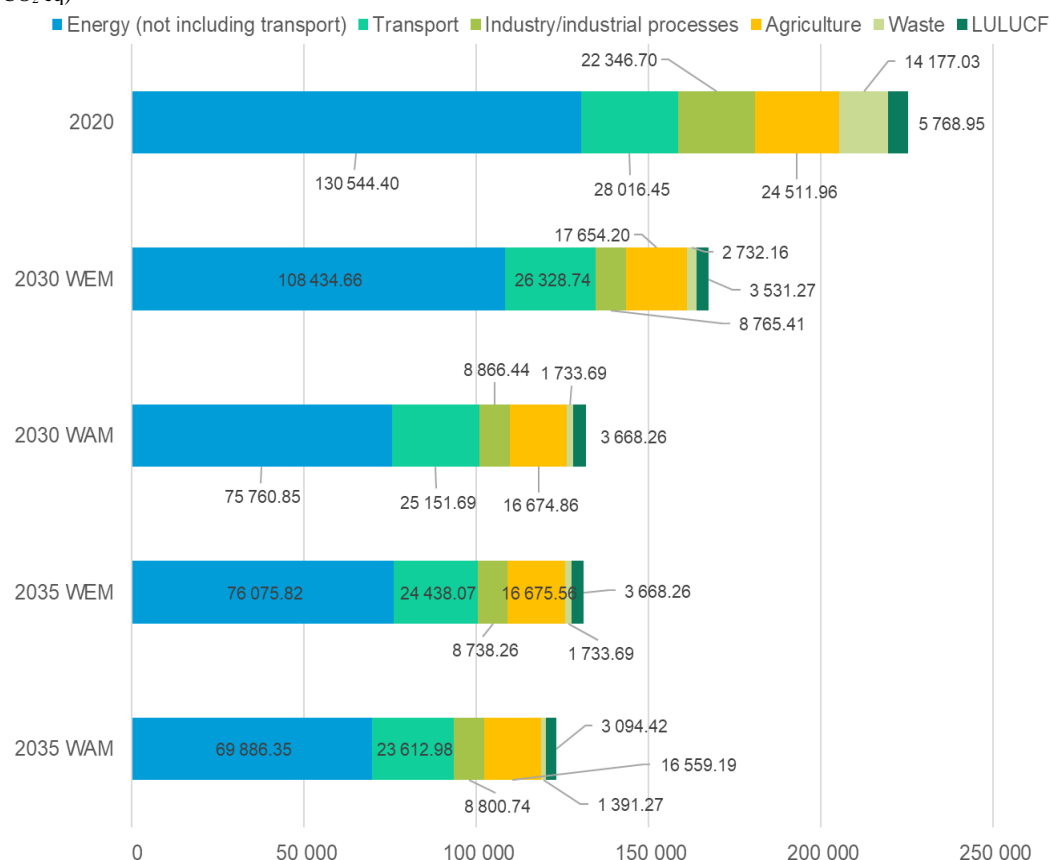
per cent below the 1990 level under the WEM scenario and 49.8 per cent below the 1990 level under the WAM scenario (excluding LULUCF).

72. The Kingdom of the Netherlands presented the WEM and WAM scenarios by sector for 2030, as summarized in figure 2 and table 8.

Figure 2

Greenhouse gas emission projections for the Kingdom of the Netherlands presented by sector

(kt CO₂ eq)



Source: The Kingdom of the Netherlands' BR5 CTF table 6.

Table 8

Summary of greenhouse gas emission projections for the Kingdom of the Netherlands presented by sector

Sector	GHG emissions and removals (kt CO ₂ eq)					Change (%)			
	1990	2030		2035		1990–2030		1990–2035	
		WEM	WAM	WEM	WAM	WEM	WAM	WEM	WAM
Energy (not including transport)	130 544.40	75 760.85	76 075.82	69 886.35	71 018.23	-42.0	-41.7	-46.5	-45.6
Transport	28 016.45	25 151.69	24 438.07	23 612.98	21 441.12	-10.2	-12.8	-15.7	-23.5
Industry/industrial processes	22 346.70	8 866.44	8 738.26	8 800.74	8 688.84	-60.3	-60.9	-60.6	-61.1
Agriculture	24 511.96	16 674.86	16 675.56	16 559.19	16 561.45	-32.0	-32.0	-32.4	-32.4
LULUCF	5 768.95	3 668.26	3 668.26	3 094.42	3 094.42	-36.4	-36.4	-46.4	-46.4
Waste	14 177.03	1 733.69	1 733.69	1 391.27	1 391.27	-87.8	-87.8	-90.2	-90.2
Total GHG emissions excluding LULUCF and including indirect CO₂ and CCS	220 513.73	119 617.12	119 314.18	111 833.75	110 744.64	-45.8	-45.9	-49.3	-49.8

Source: The Kingdom of the Netherlands' BR5 CTF table 6.

Note: Projection results for 2035 were provided by the Party during the review. The sectoral emissions do not include indirect CO₂ emissions and CO₂ captured using CCS.

73. According to the projections per sector reported for 2030 under the WEM scenario, the most significant absolute emission reductions are expected to occur in the energy and IPPU sectors, amounting to projected reductions of 42.0 and 60.3 per cent respectively between 1990 and 2030. The projections for 2035 show a similar pattern, with the most significant absolute emission reductions in the energy and IPPU sectors, amounting to 46.5 and 60.6 per cent projected reductions since 1990 respectively. The projection results under the WAM scenario follow a similar pattern, with the most significant absolute emission reductions expected to occur in the energy and IPPU sectors, amounting to 45.6 and 61.1 per cent respectively. It is notable that transport emissions are projected to reduce significantly between 2030 and 2035, with a projected decrease of 12.8 per cent between 1990 and 2030 and 23.5 per cent between 1990 and 2035. This stems from factors that include greater electrification of transport in the WAM scenario.

74. The Kingdom of the Netherlands presented the WEM and WAM scenarios by gas for 2030 and 2035, as summarized in table 9.

Table 9
Summary of greenhouse gas emission projections for the Kingdom of the Netherlands presented by gas

Gas ^a	GHG emissions and removals (kt CO ₂ eq)					Change (%)			
	1990	2030		2035		1990–2030		1990–2035	
		WEM	WAM	WEM	WAM	WEM	WAM	WEM	WAM
CO ₂	162 724.11	105 932.52	105 416.99	98 869.39	97 740.41	-34.9	-35.2	-39.2	-39.9
CH ₄	31 834.84	14 985.42	14 987.40	14 534.93	14 533.25	-52.9	-52.9	-54.3	-54.3
N ₂ O	17 478.90	6 606.24	6 593.13	6 406.29	6 387.33	-62.2	-62.3	-63.3	-63.5
HFCs	5 606.33	918.05	918.05	762.47	762.47	-83.6	-83.6	-86.4	-86.4
PFCs	2 662.85	96.33	96.33	98.22	98.22	-96.4	-96.4	-96.3	-96.3
SF ₆	206.70	93.32	93.32	32.01	32.01	-54.9	-54.9	-84.5	-84.5
NF ₃ ^b	IE	IE	IE	IE	IE	NA	NA	NA	NA
Total GHG emissions without LULUCF	220 513.73	119 617.12	119 314.18	111 833.75	110 744.64	-45.8	-45.9	-49.3	-49.8

Sources: The Kingdom of the Netherlands' BR5 CTF table 6. Projection results for 2035 were provided by the Party during the review.

^a The Kingdom of the Netherlands included indirect CO₂ emissions in its projections. Indirect CO₂ emissions and CO₂ captured using CCS are included only in the total emissions.

^b NF₃ emissions are included in PFC emissions.

75. According to the projections by gas reported for 2030 under the WEM scenario, the most significant absolute emission reductions (excluding LULUCF and CCS) are expected to occur for CO₂ and CH₄, amounting to projected reductions of 34.9 and 52.9 per cent between 1990 and 2030 respectively. Neither LULUCF CO₂ nor the projected CCS of 9,015 kt in 2030 is included in this reduction. The projections for 2035 show a similar pattern, with projected emission reductions of CO₂ and CH₄ amounting to 39.2 and 54.3 per cent since 1990 respectively. The projection results under the WAM scenario follow a similar pattern.

76. In its NC8 the Kingdom of the Netherlands included an analysis of variations in GHG emission projections based on changes in the European electricity market. It concluded that such changes lead to variations of around 5 Mt CO₂ emission reductions, leading to WEM projection ranges between -43.7 and -46.0 per cent compared with 2030 (including LULUCF). The ERT also noted that a number of planned mitigation policies were not reflected in the WAM scenario, which could account for a further estimated reduction impact of 5–6 Mt CO₂ eq. These values do not include the effects of all scheduled measures as many were not concrete enough to be included in a quantitative assessment.

(d) Assessment of adherence to the reporting guidelines

77. The ERT assessed the information reported in the NC8 and BR5 of the Kingdom of the Netherlands and identified issues relating to completeness and transparency, and thus adherence to the UNFCCC reporting guidelines on NCs and the UNFCCC reporting guidelines on BRs. The findings are in tables I.2 and II.4.

2. Assessment of the total effects of policies and measures

(a) Technical assessment of the reported information

78. In its NC8 the Kingdom of the Netherlands presented the estimated and expected total effect of implemented, adopted and planned PaMs in accordance with the WAM scenario, compared with a 2020 baseline. Information is presented in terms of GHG emissions avoided or sequestered, on a CO₂ eq basis, in 2025 and 2030.

79. The Kingdom of the Netherlands reported that the total estimated effect of its implemented, adopted and planned PaMs in 2030 is 47,300 kt CO₂ eq. According to the information reported in its NC8, PaMs implemented in the energy sector will deliver the largest emission reductions. Table 10 provides an overview of the total effect of PaMs as reported by the Party.

Table 10
Projected effects of the Kingdom of the Netherlands’ planned and implemented policies and measures in 2025 and 2030
 (kt CO₂ eq)

Sector	2025		2030	
	Effect of implemented and planned measures	Effect of planned measures	Effect of implemented and planned measures	Effect of planned measures
Energy (without transport)	25 800	NE	38 600	NE
Transport	2 600	NE	2 900	NE
Industry/industrial processes	2 000	NE	3 500	NE
Agriculture	1 200	NE	1 700	NE
Land-use change and forestry	300	NE	600	NE
Waste management	0	NE	0	NE
Total	31 800	NE	47 300	300

Source: The Kingdom of the Netherlands’ NC8.

Note: The total effect of implemented and planned PaMs is defined as the difference between the WAM scenario and a 2020 baseline. The effect of planned PaMs on the total emissions is estimated based on the difference between projected emissions in the WEM and WAM scenarios.

(b) Assessment of adherence to the reporting guidelines

80. The ERT assessed the information reported in the NC8 of the Kingdom of the Netherlands and identified an issue relating to completeness, and thus adherence to the UNFCCC reporting guidelines on NCs. The finding is described in table I.2.

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

(a) Technical assessment of the reported information

81. In the NC8 the Kingdom of the Netherlands provided information on how its use of the mechanisms under Articles 6, 12 and 17 of the Kyoto Protocol is supplemental to domestic action, although it did not elaborate on supplementarity as such. The information provided relates to credit units from Kyoto Protocol market-based mechanisms, the Latvian Green Investment Scheme and the Prototype Carbon Fund acquired for the first commitment

period. No units from market-based mechanisms and LULUCF activities were used by the Party to meet the Kyoto Protocol target for the second commitment period.

82. The Party reported limitations on external credits purchased by companies under the EU ETS. Under the EU ETS, the use of international credits was allowed up to the specific levels set in the EU ETS directive (directive 2003/87/EC), equating to around 1.5 billion certified emission reduction and ERU entitlements in 2005–2020. Quality standards also apply to the use of international credits under the EU ETS, including a ban on the use of credits from LULUCF projects and certain industrial gas projects. International credits will no longer be used for EU ETS compliance in the system’s fourth trading period (2021–2030). In the ESD sectors, the annual use of international credits is currently limited to up to 3 per cent of each member State’s ESD emissions in 2005, with a limited number of member States being permitted to use an additional 1 per cent from projects in the LDCs or small island developing States, subject to conditions.

(b) Assessment of adherence to the reporting guidelines

83. The ERT assessed the information reported in the NC8 of the Kingdom of the Netherlands and recognized that the reporting is complete and transparent, and thus adheres to the reporting guidelines for supplementary information. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

G. Provision of financial, technological and capacity-building support to developing country Parties

1. Technical assessment of the reported information

(a) Approach and methodologies used to track support provided to non-Annex I Parties

84. In its NC8 and BR5 the Kingdom of the Netherlands reported information on its provision of financial, technological and capacity-building support to non-Annex I Parties.

85. The Party provided support that it considers to be “new and additional”. Its definition of “new and additional” is all annual disbursements approved by the parliament in the foreign trade and development cooperation budget for 2019 and 2020, given that the budget is approved by the parliament on an annual basis, meaning that all climate finance in the final approved budget is “new and additional” to the budgets approved in previous years. The Party reported that its public climate finance supports more than 350 projects, with those addressing climate, water and food security having the greatest relevance to climate change. The Party’s total annual climate finance doubled from USD 666 million in 2015 to some USD 1.27 billion in 2020. The Party provided examples of substantial new and additional financial commitments made in recent years, such as to the Dutch Fund for Climate and Development, the Green Climate Fund, the Global Environment Facility, the Climate Investment Funds and the LDCF. The Party illustrated that its budgets are both adequate and predictable since they are based on programme proposals and are committed through contracts and/or grant decisions.

86. The Kingdom of the Netherlands reported on the support that it has provided to non-Annex I Parties, distinguishing between support for mitigation and adaptation activities and identifying the capacity-building elements of such support. The Party explained that it tracks bilateral public climate finance for adaptation and mitigation using the OECD Development Assistance Committee Rio marker definitions, with activities marked as either principal or significant in relation to climate change. In determining the climate-specific share of its core contributions to multilateral organizations, the Party uses weighted averages of the imputed climate-specific shares of different activities calculated using the OECD Development Assistance Committee methodology. Private climate finance is identified using the OECD Development Assistance Committee methods, which were recently developed.

87. The Kingdom of the Netherlands’ national approach to tracking the provision of support includes information on indicators (for financial support), delivery mechanisms used and allocation channels tracked but does not include information on tracking indicators for

technology transfer and capacity-building. The Party did not include information on changes to its approach since the NC7 and BR4. During the review, it explained that it is currently reviewing the indicators for technology transfer and capacity-building (both quantitative and qualitative) in the light of a recently introduced reporting tool that will enable it to report on climate-related capacity-building and technology transfer programmes. Furthermore, the Party clarified that it will take time before the new reporting tool is fully operational.

88. The Party’s methodology and underlying assumptions used for collecting and reporting information on financial support, including guidelines and indicators, are based on the Rio markers (see para. 86 above).

(b) Financial resources

89. The Kingdom of the Netherlands reported in its NC8 and BR5 information on its provision of financial support to non-Annex I Parties as required under the Convention, including on financial support committed and disbursed, allocation channels and annual contributions. A 2022 policy document entitled “Do what we do best” sets out the Party’s foreign trade and development agenda; this is financed from the budget for foreign trade and development cooperation, which is annually approved by the parliament. The Party reported that it delivered on its commitment of fast-start finance during 2010–2012. Since then, the Party has chosen what it considers to be an integrated approach in line with its pledge of contributing fairly to the finance needed for climate action in developing countries, clarifying that it has contributed about USD 1.3 billion towards the goal of mobilizing jointly USD 100 billion per year by 2020 for climate action in developing countries.

90. The Kingdom of the Netherlands described how it seeks to ensure that the resources it provides to non-Annex I Parties effectively address their adaptation and mitigation needs. The Party works with multiple actors, each of which has its own processes to ensure that the activities supported by the Party meet the needs of the target developing countries. In addition, it requires its implementing partners to direct its activities towards the poorest and most vulnerable countries and to develop the necessary processes, guidelines and manuals to that end. The Party also evaluates the performance of Dutch fund managers on the basis of the objectives, scope and focus of the activities. For example, the Dutch Fund for Climate and Development determined that 65 per cent of its investments must be directed towards adaptation. Table 11 summarizes the information reported by the Kingdom of the Netherlands on its provision of financial support.

Table 11
Summary of information on provision of financial support by the Kingdom of the Netherlands in 2019–2020
 (Millions of United States dollars)

<i>Allocation channel of public financial support</i>	<i>Disbursement in 2019–2020</i>
Official development assistance	10 586.31
Climate-specific contributions through multilateral channels, including:	441.59
Global Environment Facility	35.72
LDCF	23.50
Special Climate Change Fund	0.00
Adaptation Fund	0.00
Green Climate Fund	95.73
Trust Fund for Supplementary Activities	0.00
Other multinational climate change funds	17.47
Financial institutions, including regional development banks	226.85
United Nations bodies	42.33
Climate-specific contributions through bilateral, regional and other channels	924.47

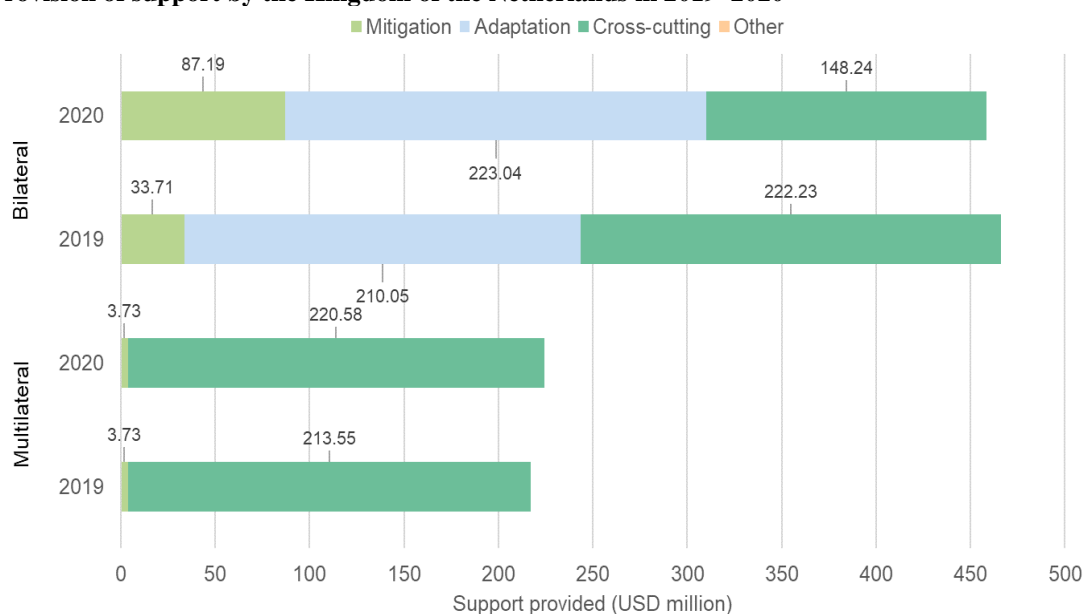
Sources: The Kingdom of the Netherlands’ BR5 CTF tables and Query Wizard for International Development Statistics, available at <http://stats.oecd.org/qwids/>.

91. The Kingdom of the Netherlands’ climate-specific public financial support¹⁰ totalled USD 1,366.06 million in 2019–2020, representing an increase of 22.0 per cent since the BR4 (2017–2018).¹¹ Since the BR4, it has increased its contributions by 19.6 per cent as reported in its local currency. With regard to future financial pledges aimed at enhancing the contribution of developing countries towards implementing the Convention, the Party has committed to significantly increase its provision of climate finance (mobilized private and public), from EUR 1.25 billion in 2021 to EUR 1.80 billion in 2025.

92. The Kingdom of the Netherlands contributed through multilateral channels USD 441.59 million in 2019–2020. The contributions were made to specialized multilateral climate change funds, such as the Green Climate Fund, the Global Environment Facility, the LDCF and the Climate Investment Funds. The largest recipients of the Party’s funding through multilateral channels were the World Bank (accounting for 44.0 and 22.8 per cent of total multilateral funding in 2019 and 2020 respectively), followed by the Green Climate Fund (accounting for 17.2 and 25.9 per cent of total multilateral funding in 2019 and 2020 respectively), the African Development Fund (accounting for 8.4 and 14.2 per cent of total multilateral funding in 2019 and 2020 respectively) and the Global Environment Facility (accounting for 7.4 and 8.6 per cent of total multilateral funding in 2019 and 2020 respectively). It has increased its contributions through multilateral channels by 12.9 per cent in 2019–2020 (from USD 391.22 million in 2017–2018). The Party explained in its NC8 that it is committed to scaling up its support for mitigation and adaptation activities in developing countries and has succeeded in increasing its provision of international climate finance year on year after having delivered on its commitment of fast-start finance during 2010–2012. Information on financial support from the public sector provided through multilateral and bilateral channels and the allocation of that support by target area is presented in figure 3 and table 12.

Figure 3

Provision of support by the Kingdom of the Netherlands in 2019–2020



Sources: The Kingdom of the Netherlands’ BR5 CTF tables 7, 7(a) and 7(b).

^a Note that variances in contribution amounts from year to year can occur that are not reflective of trends, owing to factors such as the biennial or triennial contribution cycles of some multilateral funds, the timing of approvals for individual bilateral projects or changes in exchange rates.

¹⁰ For the remainder of this chapter, the term “financial support” means climate-specific financial support, unless otherwise noted.

¹¹ Comparisons with data from previous years have been calculated directly without adjusting for inflation.

Table 12

Summary of information on channels of financial support reported by the Kingdom of the Netherlands

(Millions of United States dollars)

Allocation channel of public financial support	Amount disbursed in 2019–2020	Comparison with amount disbursed in 2017–2018		Share of total (2019–2020) (%)
		Difference	Change (%)	
Detailed information by type of channel				
Multilateral channels				
Mitigation	7.47	–0.3	–3.8	1.7
Adaptation	0.00	–13.4	–100.0	0.0
Cross-cutting	434.12	64.1	17.3	98.3
Other	0.00	0		0.0
Total multilateral	441.59	50.4	12.9	100.0
Bilateral channels				
Mitigation	120.90	–0.5	–0.4	13.1
Adaptation	433.10	51.6	13.5	46.8
Cross-cutting	370.47	145.3	64.5	40.1
Other	0.00	0		0.0
Total bilateral	924.47	196.4	27.0	100.0
Total multilateral and bilateral	1366.07	246.7	22.0	100.0

Source: The Kingdom of the Netherlands' BR5 CTF tables 7, 7(a) and 7(b).

93. The Party reported detailed information on the total financial support provided through bilateral and regional channels (USD 924.47 million) in 2019–2020. During the reporting period, the Kingdom of the Netherlands placed a particular focus on developing countries in Africa and Asia, including Afghanistan, Bangladesh, Benin, Burundi, Egypt, Ethiopia, Ghana, Indonesia, Kenya, Lebanon, Mali, Mozambique, Myanmar, Niger, Nigeria, Rwanda, Senegal, Somalia, South Sudan, the State of Palestine, Sudan, Tunisia, Uganda, Viet Nam and Yemen.

94. The NC8 and the BR5 provide information on the types, sectors and instruments of support provided. The information reported shows that in 2019–2020 the average shares of bilateral and regional financial support allocated to mitigation, adaptation and cross-cutting projects were 13.1, 46.8 and 40.1 per cent respectively. In 2019–2020, the majority of financial contributions through bilateral and regional channels were allocated to the agriculture, forestry, fishing, energy, transport, industry, water and sanitation, and cross-cutting sectors. The ERT noted that grants provided in 2019–2020 accounted for most of the bilateral and regional financial support. The Kingdom of the Netherlands works closely with Germany, Norway and Switzerland to provide access to renewable energy in 20 countries through the Energising Development partnership, which focuses on developing markets for technologies, such as cooking stoves, micro-hydropower and small-scale solar solutions.

95. The Kingdom of the Netherlands explained that private finance (which has a focus on adaptation) is mainly mobilized as blended and innovative finance through its private sector development portfolio, cooperation with multilateral development banks and the Dutch Development Bank and the development of specific funds aimed at public–private cooperation. It also reported on how it uses public funds to promote private sector financial support for developing countries to increase mitigation and adaptation efforts with a view to bringing about the transformative change needed for low-carbon, climate-resilient development. The Dutch Fund for Climate and Development strives to direct at least 65 per cent of its financial flows to support climate adaptation in the poorest and most vulnerable countries. The Party reported that it mobilized EUR 750 million and EUR 523 million in private finance in 2019 and 2020 respectively. Dutch activities such as Climate Investor One, the Dutch Fund for Climate and Development, Solidaridad, the Sustainable Trade Initiative, the AGRI3 Fund, Geodata for Agriculture and Water, and the Sustainable Development Goals Partnership are designed to mobilize and attract private investment towards low-carbon, climate-resilient development. The Global Innovation Lab on Climate Finance is an

interdisciplinary initiative to scale up private climate finance in developing countries through innovative programmes in order to support local efforts, such as those aimed at protecting vulnerable ecosystems.

96. The Party explained that its approach to reporting on private financial flows leveraged by bilateral climate finance for mitigation and adaptation activities in non-Annex I Parties follows the OECD Research Collaborative on Tracking Private Climate Finance, which together with the OECD Development Assistance Committee refines methods for tracking such financial flows. The Party explained that it had some difficulty in generating estimates of private financial flows mobilized owing to limited data from multilateral development banks. During the review, it clarified that the OECD Development Assistance Committee has established arrangements with those multilateral development banks to gain access to the information needed, but that it is unable to describe those arrangements further since it is not involved therein.

97. An example of the Kingdom of the Netherlands' support is the Sustainable Water Fund, which is a global public–private partnership in the field of water and sanitation aiming to contribute to water safety and reliability in developing countries, including through innovative technological solutions to promote efficient water usage, the safety of river deltas and improved river basin management. Cooperation in International Waters in Africa is a mechanism coordinated by the World Bank to address the impact of climate change on the water cycle in Africa by improving adaptative capacity and resilience by strengthening information collection, institutions and infrastructure with a view to making them climate-smart.

(c) Technology development and transfer

98. The Kingdom of the Netherlands reported on its measures and activities related to technology transfer, access and deployment benefiting developing countries, including activities undertaken by the public and private sector. Examples of support provided for the deployment and enhancement of the endogenous capacities and technologies of non-Annex I Parties include a range of programmes implemented by the Netherlands Enterprise Agency, such as the Energy Transition Facility, as well as other programmes, such as the Energy Sector Management Assistance Program and the Consultative Group for International Agricultural Research. The programmes aim to facilitate access to sustainable energy for poor households in developing countries by sharing knowledge and best practices, providing advice on policies and supporting project preparation.

99. The Party focused the provision of its technology transfer support on the following recipient countries, target areas and focus sectors: recipient countries of Bangladesh, Burundi, Egypt, Ethiopia, Ghana, Indonesia, Iraq, Jordan, Kenya, Niger and Uganda, among others, as well as projects at the global level; target areas of mitigation and adaptation; and focus sectors of clean energy, water resource management, agricultural technologies and disaster risk reduction. The Kingdom of the Netherlands has supported several international partnerships to stimulate technology development in developing countries, such as the Glasgow Breakthroughs, the International Energy Agency and the Clean Energy Ministerial.

100. Since its last NC and BR, the Kingdom of the Netherlands has implemented additional measures and activities, including projects and programmes such as EnDev Biogas, Climate Resilient Agribusiness for Tomorrow, Development Smart Innovation through Research in Agriculture, and Water and Energy for Food. It also described success stories in relation to technology transfer, and in particular measures taken to promote, facilitate and finance the transfer and deployment of climate-friendly technologies. These measures were mainly the result of the Party's active engagement in international technology-based programmes aimed at promoting practicable steps to facilitate and finance the transfer of, or access to, environmentally sound technologies. An example of a success story reported is the project on waste-to-energy development in the State of Palestine, which is aimed at reducing CO₂ emissions, increasing energy independence and solving issues related to municipal waste. The main factors for the success of the project were the high level of skill in the waste-to-energy sector in the Kingdom of the Netherlands at the national and international level and the coordination between Dutch consultants and Palestinian stakeholders.

101. The ERT noted that all technology development and transfer activities listed in CTF table 8 were reported as implemented and none as planned. During the review, the Party indicated that it listed activities under implementation only, clarifying that planned activities related to technology development and transfer are still under appraisal and the decision of whether to implement them is taken upon completion of the appraisal process. The ERT noted that the Party could improve the transparency of its reporting by stating explicitly in the BR that no planned activities were identified.

102. The Party reported that it faced challenges in reporting information on lessons learned in relation to technology transfer. During the review, the Party clarified that it does not have a process for evaluating policies or consolidating reporting on lessons learned in relation to technology transfer, indicating, however, that information on lessons learned can be obtained directly from the implementing partners, such as the Green Climate Fund and the Climate Investment Funds, if available.

(d) Capacity-building

103. The Kingdom of the Netherlands reported on its capacity-building support for mitigation, adaptation and technology that responds to the existing and emerging needs identified by non-Annex I Parties. It described individual measures and activities related to capacity-building support in textual and tabular format at the individual, institutional and systemic level. Examples of support given at the systemic level include assisting governments in implementing enhanced nationally determined contributions and supporting local knowledge institutes, such as the joint cooperation partnerships established in Bangladesh, Egypt and Indonesia and assisting civil society organizations, for instance through the Global Alliance for Green and Gender Action, the African Activists for Climate Justice, the Amplifying Voices for Just Climate Action programme and the Green Livelihoods Alliance's Forests for a Just Future programme. The Party indicated that it has supported a range of capacity-building activities relating to water resources and food security, renewable energy, disaster risk reduction, climate-smart agriculture and forestry, and emission reductions.

104. The Kingdom of the Netherlands has supported climate-related capacity development activities relating to adaptation, mitigation and cross-cutting areas. Since the BR4, the focus of support has remained the same. The Party's support has responded to the existing and emerging capacity-building needs of non-Annex I Parties by following the principles of cooperation between donors and across programmes. During the review, the Party explained that it follows processes established by national, regional and local authorities in the target non-Annex I countries to ensure that the capacity-building activities effectively meet the needs of those countries. The Party further explained that it only approves finance for activities that meet the needs of those target countries, institutions and populations. These activities have to be based on elaborate context, policy and stakeholder analyses, on risk, vulnerability and opportunity assessments, and on evidence-based theories of change.

2. Assessment of adherence to the reporting guidelines

105. The ERT assessed the information reported in the NC8 and BR5 of the Kingdom of the Netherlands and identified issues relating to completeness and transparency, and thus adherence to the UNFCCC reporting guidelines on NCs and the UNFCCC reporting guidelines on BRs. The findings are described in tables I.3 and II.5.

3. Reporting on finance, capacity-building and technology transfer information related to the Kyoto Protocol

(a) Technical assessment of the reported information

106. In its NC8 the Kingdom of the Netherlands reported its activities, actions and programmes undertaken in fulfilment of its commitments under Article 10 of the Kyoto Protocol. The Party provided information on steps taken to promote, facilitate and finance the transfer of technology to developing countries and to build their capacity in order to facilitate implementation of Article 10 of the Kyoto Protocol. The Party reported that technology development and transfer form an integral part of many activities related to

climate change mitigation and adaptation, encompassing both hardware (equipment) and software (know-how, methods and practices). Private sector and knowledge institutes are partners in providing support. The Party described actions taken under various international partnerships and initiatives to support capacity-building in developing countries.

107. The Kingdom of the Netherlands provided information on its implementation of Article 11 of the Kyoto Protocol, including information on how it took into account the need for adequacy and predictability in the flow of financial resources. It explained that it has contributed around USD 1.3 billion in mobilized public and private climate finance towards the goal of mobilizing jointly USD 100 billion per year by 2020 for climate action in developing countries, which it considers a reasonable share of the total from developed countries. It also elaborated that it could not explain the adequacy of the flow of resources at the aggregate level since no formal decision has been taken on the share of the USD 100 billion to be committed by each developed country. The Party illustrated that its financial allocations are both adequate and predictable since they are based on proposals stemming from various programmes and committed through contracts or grant decisions. It also described how its contributions are “new and additional” (see para. 85 above).

108. The Kingdom of the Netherlands did not report on its financial contributions to the Adaptation Fund. During the review, it clarified that its support is primarily targeted at the LDCs and therefore its support for adaptation goes through the LDCF.

(b) Assessment of adherence to the reporting guidelines

109. The ERT assessed the information reported in the NC8 of the Kingdom of the Netherlands and identified issues relating to completeness and transparency, and thus adherence to the reporting guidelines for supplementary information. The findings are described in table I.10.

H. Vulnerability assessment, climate change impacts and adaptation measures

1. Technical assessment of the reported information

110. In its NC8 the Kingdom of the Netherlands provided information on the expected impacts of climate change in the country; the adaptation policies covering regional, sectoral and cross-sectoral vulnerabilities and considerations; and an outline of the action taken to implement Article 4, paragraph 1(b) and (e), of the Convention with regard to adaptation. It provided a description of climate change vulnerability and impacts on sectors and highlighted the adaptation response actions taken and planned at different levels of government. The vulnerable sectors identified in the NC8 were water and spatial management; biodiversity and natural ecosystems; agriculture, horticulture and fisheries; health and welfare; recreation and tourism; infrastructure (road, rail, water and aviation); energy, information technology and telecommunications; and public safety and security. Since the NC7, the Party has published the implementation programme of its Climate Adaptation Strategy.

111. The Party reported on several adaptation measures and plans for the water and spatial management sector, including flood risk management and freshwater supply plans (such as through dyke enforcement, beach nourishment, the Room for the River programme and increased storage of freshwater supply and reduced demand for fresh water); and spatial planning measures for becoming climate-proof and climate-resilient by 2050 (such as reducing the consequences of flooding, improving infrastructure and adapting to drought and heat stress). Although the Party’s vulnerable sectors now extend beyond the water domain, many of the adaptation measures for other sectors are still in development. In the agriculture sector, for example, a five-pillar system has been developed for implementing adaptation measures that address the water system, the soil system, crops and cultivation systems, livestock farming and supporting instruments, and there are measures being developed to promote a more climate-resilient infrastructure, including by making new urban areas climate-adaptive and nature-inclusive.

112. The Kingdom of the Netherlands addressed adaptation matters through the adoption of the National Climate Adaptation Strategy (2016) and its Implementation Programme for 2018–2019, the Delta Plan on Spatial Adaptation (2017) and the National Perspective on Climate Adaptation for 2017–2019, as well as the conclusion of a 2021 study, by the Netherlands Environmental Assessment Agency, on navigating towards climate resilience through the short- and long-term monitoring and evaluation of climate adaptation measures, which together provided further direction to government agencies in enhancing preparedness for climate change and addressing adaptation matters.

113. During the review, the Party provided further information on an evaluation of the National Climate Adaptation Strategy, which identified the Strategy’s positive aspects and areas for further adjustment. The Council of Ministers has also approved the preparation of a national adaptation plan (covering 2023) and an update thereto (covering 2023–2026); documents identifying (1) interactions between climate change adaptation and mitigation (to be published in 2023) and (2) options to strengthen governance (to be published in 2023); and an adaptation monitoring report. Table 13 summarizes the information on vulnerability and adaptation to climate change presented in the NC8 of the Kingdom of the Netherlands.

Table 13

Summary of information on vulnerability and adaptation to climate change reported by the Kingdom of the Netherlands

<i>Vulnerable area</i>	<i>Examples/comments/adaptation measures reported</i>
Agriculture, horticulture and fisheries	<p>Vulnerability: Changes in precipitation and extreme weather events will threaten harvest production and lead to increased waterlogging, damage to buildings and hillside erosion. An increase in temperature and increased rainfall will result in changes in the distribution, frequency and intensity of pests and diseases and an increase in livestock heat stress. Greater crop damage and reduced crop production could be caused by a combination of drought, sea level rise and land subsidence. These will result in economic losses. Increased temperatures could also have a positive effect, including raising crop productivity and extending the growing season. The fisheries sector will be affected by rising temperatures and ocean acidification, which will lead to changes in the species inhabiting open water and a decline in species in freshwater systems.</p> <p>Adaptation: The Action Programme for Climate Adaptation in Agriculture was established by the Ministry of Agriculture, Nature and Food Quality in 2020 in collaboration with stakeholders. Central to the Action Programme are its five pillars: the water system (cooperation among farmers and linkage with the Delta Programme), the soil system (improvement in soil health and quality), crops and cultivation systems (development of climate-resilient crops), livestock farming (heat stress policy in barns) and supporting instruments (risk management, knowledge and innovative practices). Farmers can adapt to high-intensity rainfall by improving drainage but require more assistance in the form of research and innovation at the sectoral level.</p>
Biodiversity and natural ecosystems	<p>Vulnerability: The main effects of climate change on biodiversity and natural ecosystems include changes in the growing and breeding seasons, which may start earlier; a decrease in cold-tolerant species in the north of the country and an increase in heat-tolerant species in the south; changes in the composition of species’ migration patterns; the loss of native species and the emergence of new species (including pests and nuisance species); groundwater depletion; salinization and loss of habitat in or near water; and damage caused by increased flooding. Climate change may be advantageous to some plants and animals but not to others.</p> <p>Adaptation: The Kingdom of the Netherlands has conducted assessments of its nature policy and biodiversity goal in relation to climate change and has established a nature-inclusive agenda that builds the foundations for the restoration and strengthening of nature in and around protected areas. In addition, the establishment in 1990 of the National Ecological Network and the planned acquisition of 80,000 ha will help to offset the impact of climate change by allowing more space for natural processes. Climate buffer projects have been carried out and subsequently used to demonstrate best practices by the Delta Programme, which in turn led to further knowledge development and publicity.</p>
Tourism and recreation	<p>Vulnerability: The main impacts of climate change on this sector are restrictions on water-based recreational activities and a decline in water quality due to drought conditions. Sea level rise will result in the erosion of beaches and dunes. However, there</p>

<i>Vulnerable area</i>	<i>Examples/comments/adaptation measures reported</i>
Energy, information technology and telecommunications	<p>will be some positive effects, such as a longer tourist season and an increased number of tourists.</p> <p>Adaptation: No adaptation strategies were identified.</p> <p>Vulnerability: With the increasing electrification of society, the dependence on and demand for energy is expected to increase. Renewable energy systems are more vulnerable to climate and weather extremes than those based on fossil fuels. The consequences of disruptions to energy supply due to extreme weather events will be felt in not only the energy sector but all dependent sectors of society.</p> <p>Adaptation: The government authorities are working alongside private sector companies and electrical grid managers in a number of projects to climate-proof the country’s vital functions. In an effort to identify risk-reducing measures, grid managers have conducted research to determine the potential impact of climate change on their respective sections of infrastructure. Research is also being undertaken to understand the effects of a large-scale power outage on the country’s vital functions.</p>
Health and welfare	<p>Vulnerability: The main effect of climate change on health is heat stress, which will result in an increase in morbidity and mortality, and increased pluvial flooding and flood threats. Heat stress is exacerbated by atmospheric pollution and can trigger an increase in the incidence of respiratory diseases, diseases linked to air quality and allergies such as hay fever and house dust mite allergies. Warm and wet conditions will result in an increase in vector-borne diseases, water-related diseases and disorders related to exposure to ultraviolet radiation.</p> <p>Adaptation: The National Heat Plan, which was developed in 2007 and updated in 2015 in cooperation with several agencies and the Ministry of Health, Welfare and Sport, outlines a range of possible measures that local institutions and residents can take to cope with sustained heat levels. The updated Climate Impact Atlas offers knowledge and best practices for handling heat stress. Municipal health departments help to prevent climate-related infectious diseases and exposure to allergens. Under the Knowledge for Climate research programme, provincial and municipal authorities have studied the urban heat island effect and may adopt measures to combat and control that effect, including modifications to physical structures and the establishment of official channels for the provision of timely information to vulnerable groups.</p>
Infrastructure (road, rail, water and aviation)	<p>Vulnerability: Climate change will result in more frequent extreme weather events, which will cause significant economic losses. Increases in precipitation together with higher temperatures may accelerate the corrosion and deterioration of infrastructure and necessitate an increase in the frequency of inspections and maintenance work. This may result in the reduced availability of infrastructure and higher transport costs. In addition, transport may be more vulnerable to extreme weather owing to its dependence on energy, information technology and telecommunications.</p> <p>Adaptation: The Delta Programme supports the development of climate-resilient infrastructure. Spatial adaptation measures include urban planning, renewal and restructuring, while non-spatial measures include technical measures, early identification, assessment and warning, dissemination of information of health risks, cultural and behavioural changes, and regulatory adjustments. Climate-proofing urban areas against flooding is being strengthened by improving drainage, adding green roofs, building water squares and constructing new open water areas. The Climate Impact Atlas prepared by the Directorate-General for Public Works and Water Management shows the climate-related risks to the national road and water infrastructure and the Directorate-General has developed a three-year implementation programme to address those risks. ProRail has published a climate adaptation implementation agenda in addition to implementing measures to manage the risks associated with flooding and extreme weather. The Integrated River Management programme is designed to identify riverbed positions and manage the sediment, discharge and storage capacity of the Meuse and Rhine tributaries by 2050.</p>
Water and spatial management	<p>Vulnerability: The main impacts of climate change on water management include the increased likelihood of coastal erosion, coastal flooding and flooding during peak discharge from rivers in winter; more frequent flooding in urban areas as a result of extreme rainfall events; compromised transport capacity and freshwater availability due to a decrease in river discharges in summer; increased probability of a deterioration in water quality and a decrease in water volumes and water levels caused by drought or high</p>

<i>Vulnerable area</i>	<i>Examples/comments/adaptation measures reported</i>
	<p>temperatures; affected availability of fresh water due to an increase in saltwater intrusion into surface water bodies; and an increase in the concentration of certain substances, such as nutrients, in water due to water evaporation. The sea level rise will lead to coastal erosion and reduced safety along the coast necessitating increased pumping capacity for discharging excess freshwater supply into the seas during peak periods.</p> <p>Adaptation: An assessment of the strength of dykes in the Kingdom of the Netherlands indicated that a number of them do not meet the safety standards required. To address the issue, a series of flood protection projects have been prioritized. A more integrated approach has been taken to seeking water safety solutions, which includes the Room for the River programme and Meuse projects. More than 30 projects enabling the country’s rivers to handle higher discharge rates have been completed. In 2017, new safety standards were implemented for the flood defence system. The Delta Programme has a multilayer safety model, the three layers being protection against flooding, spatial planning and emergency management. Sand replenishment is being considered for coastal management. In 2019, a research programme on future adaptation to sea level rise was initiated. The Delta Plan on Freshwater Supply, which includes a smart water management system using information technology, and the Delta Plan on Spatial Adaptation were developed in 2017.</p>

114. The Kingdom of the Netherlands provided a detailed description of international adaptation activities, including the establishment of the Sustainable Water Fund, which is a Dutch subsidy facility stimulating public–private partnerships (42 to date) to accelerate support for water safety and security in developing countries (24 to date). The Fund cooperates closely with multiple stakeholders on the implementation of inclusive, sustainable and extensible projects in areas such as waste management; efficient water use in agriculture; and integrated water management. The Party also provided information on its bilateral cooperation with developing countries on adaptation funded through the Sustainable Water Fund, such as the SCALE project on scaling universal access to safe and climate-resilient water services in Rwanda; a project on water efficiency in sustainable cotton-based production systems in India; a project on improved water allocation and irrigation efficiency in the Ziway-Shalla basin in Ethiopia; and a project on securing eroding delta coastlines and building with nature in Indonesia.

2. Assessment of adherence to the reporting guidelines

115. The ERT assessed the information reported in the NC8 of the Kingdom of the Netherlands and recognized that the reporting is complete and transparent, and thus adheres to the UNFCCC reporting guidelines on NCs. There were no issues raised during the review relating to the topics discussed in this chapter of the review report.

I. Research and systematic observation

1. Technical assessment of the reported information

116. In its NC8 the Kingdom of the Netherlands provided information on its general policy and funding relating to research and systematic observation and both domestic and international activities, including contributions to the World Climate Programme, the International Geosphere–Biosphere Programme and the IPCC. The Dutch Research Council and the Royal Netherlands Academy of Arts and Sciences coordinate the country’s contributions to international research on climate systems. The Party also provided information on its identification of opportunities for free and open international exchange of data and information and on action taken to overcome any barriers thereto. Cooperation under national and international research programmes facilitates dialogue between stakeholders, including in the private sector. The Dutch research community participates in European joint initiatives in the areas of climate, agriculture, oceans and water, aligning research activities in different countries and playing a key role in shaping the EU Horizon 2020 and Horizon Europe programmes, and the new European research programme from 2021.

117. The Party has implemented and planned international and domestic policies and programmes on climate change research, systematic observation and climate modelling that

aim to advance capabilities to predict and observe the physical, chemical, biological and human components of the Earth's system over space and time. In addition to participating in European and international research programmes, such as Horizon 2020, Horizon Europe, the Copernicus Climate Change Service and the Integrated non-CO₂ Greenhouse Gas Observing System, it has national research programmes in these areas conducted by the Dutch Research Council and programmes supported by ministries and knowledge networks.

118. The Kingdom of the Netherlands' climate research is co-managed under the World Climate Research Programme. The Royal Netherlands Meteorological Institute coordinates the collaboration of Dutch researchers with Working Groups I, II and III of the IPCC, with 18 Dutch scientists having authored or co-authored parts of the Sixth Assessment Report of the IPCC and IPCC special reports. In 2022, the Royal Netherlands Meteorological Institute initiated a three-year programme co-funded by the Ministry of Infrastructure and Water Management to bridge capacity gaps in meteorological and hydrological data, research and services in support of climate adaptation worldwide. In addition, the Party is part of the Belmont Forum, which aims to accelerate international research by aligning and coordinating the participants' research programmes; established the Dutch Research Council, which coordinates sustainability efforts; and participates in the Joint Programming Initiative on Agriculture, Food Security and Climate Change.

119. In terms of activities related to systematic observation, the Party reported on national plans, programmes and support for ground- and space-based climate observing systems, including satellite and non-satellite climate observation. It also reported on challenges related to the maintenance of a consistent and comprehensive observation system. It noted that it has not established an integrated national programme for contributions to the Global Climate Observing System owing to the absence of a well-defined structure, lack of funding and resources and the absence of an identified focal point.

120. The Party carries out systematic observation with its network of more than 40 observation stations across the Kingdom of the Netherlands and the Dutch continental shelf. These observations are enhanced by special observational programmes carried out by universities and research institutes at the Cabauw Experimental Site for Atmospheric Research. The Ruisdael observatory is one of the selected stations for the Global Climate Observing System Reference Upper-Air Network. Furthermore, the Party contributes to the Baseline Surface Radiation Network, which is aimed at detecting significant changes in the Earth's radiation field at the Earth's surface that may be related to climate change. Through the Royal Netherlands Meteorological Institute Satellite Application Facilities, it also participates in monitoring activities relating to oceans and ice, the ozone and atmospheric chemistry, and weather prediction. It also participates in the European Space Agency's Climate Change Initiative, which contributes to the Essential Climate Variables databases, and conducts systematic oceanic observations under the international Argo programme.

121. The NC8 reflects actions taken to support capacity-building and the establishment and maintenance of observation systems and related data and monitoring systems in developing countries. The Kingdom of the Netherlands provided funding for scientists from developing countries working on global climate change research, such as in the Paramaribo Atmospheric Observatory, which was established in 1999 with a grant from the Dutch Research Council as a joint initiative of the Royal Netherlands Meteorological Institute and the Meteorological Service of Suriname and is now fully funded by the Royal Netherlands Meteorological Institute. The Observatory conducts regular ozone measurements in the troposphere and stratosphere. The Party also provided support for the TROPOspheric Monitoring Instrument, which determines atmospheric composition and has climate research benefits for both developed and developing countries owing to the global coverage of its satellites; the Global Facility for Disaster Reduction and Recovery, which assists developing countries in improving understanding of, and reducing vulnerabilities to, natural hazards and climate change; and the Climate Risk and Early Warning Systems Initiative for financing the establishment and maintenance of weather stations, radar facilities and early warning systems in developing countries.

2. Assessment of adherence to the reporting guidelines

122. The ERT assessed the information reported in the NC8 of the Kingdom of the Netherlands and identified issues relating to completeness and transparency, and thus adherence to the UNFCCC reporting guidelines on NCs. The findings are described in table I.4.

J. Education, training and public awareness

1. Technical assessment of the reported information

123. In its NC8 the Kingdom of the Netherlands provided information on its actions relating to education, training and public awareness at the domestic and international level. The Party provided information on the general policy on education, training and public awareness; primary, secondary and higher education; public information campaigns; training programmes; education materials; resource or information centres; the involvement of the public and non-governmental organizations; and its participation in international activities.

124. The general policy to promote education, training and public awareness in the Kingdom of the Netherlands aims at introducing sustainability into the curricula at all levels of education as per the Constitution; fostering a network of initiatives to raise awareness of sustainable development among organizations and educational institutions; providing funding to institutions that promote climate awareness; organizing events to facilitate the implementation of these actions; and involving youth in all aspects of education, training and public awareness.

125. The Kingdom of the Netherlands worked with experts in nine development teams to review the curricula in primary and secondary schools, with the resulting advice to be incorporated by the Netherlands Institute for Curriculum Development into specific learning standards. In addition, an interdepartmental sustainable schools task force was established to foster cooperation on matters relating to youth, sustainability and education, adopting a whole school approach to integrate the objectives of the Sustainable Development Goals into education. In the light of the energy transition, climate change and sustainable energy have become two areas of primary focus for the Party. Universities are being encouraged to develop programmes and projects related to these subjects. The Party also initiated several public information campaigns to raise awareness of climate issues, including the National Climate Week, which helps to inspire more active participation in climate-related issues, and the “Everyone chips in” campaign to help citizens to increase the sustainability of their environs, which has now become the “Flip the switch/Turn it down” campaign to promote the conservation of energy.

126. In recognition of the key role of communication, the Kingdom of the Netherlands established Milieu Centraal, a knowledge centre for information on the climate and the environment aimed at countering misinformation. The Government also publishes information on climate-related policies, plans and activities on various websites. Organizations such as the Dutch Youth Climate Movement, the Dutch National Youth Council, Youth for Climate NL and umbrella organizations for climate and energy issues are engaged in raising public awareness of climate change. The We Are Tomorrow Global Partnership youth initiative, consisting of over 70 youth organizations in the Kingdom of the Netherlands, was launched in 2019 by the Ministry of Foreign Affairs. Under the Youth Climate Agenda 2022, the Partnership supported other youth organizations in the Global South in undertaking climate action. In addition, the Government initiated the Young Climate Ambassadors of the Future Programme, offering young people a one-year training course to become climate ambassadors.

127. The Kingdom of the Netherlands reported on several courses and training programmes to increase international awareness of climate change, including the Middle East and North Africa Scholarship programme and the Netherlands Fellowship Programme. It is also involved in several forums for international cooperation on education for sustainable development, such as under the United Nations Educational, Scientific and Cultural Organization, the Economic Commission for Europe and the European Green Deal.

2. Assessment of adherence to the reporting guidelines

128. The ERT assessed the information reported in the NC8 of the Kingdom of the Netherlands and recognized that the reporting is complete and transparent, and thus adheres to the UNFCCC reporting guidelines on NCs. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

III. Conclusions and recommendations

129. The ERT conducted a technical review of the information reported in the NC8 of the Kingdom of the Netherlands in accordance with the UNFCCC reporting guidelines on NCs. The ERT concluded that the reported information mostly adheres to the UNFCCC reporting guidelines on NCs and that the NC8 provides an overview of the national climate policy of the Party.

130. The information provided in the NC8 includes most of the elements of the supplementary information under Article 7, paragraph 2, of the Kyoto Protocol. The Kingdom of the Netherlands reported on the national system, the national registry, supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol, PaMs in accordance with Article 2 of the Kyoto Protocol, domestic and regional programmes and/or legislative arrangements and enforcement and administrative procedures, information under Article 10 of the Kyoto Protocol, and financial resources provided to developing country Parties. 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 was provided by the Party in its 2022 annual submission.

131. The ERT conducted a technical review of the information reported in the BR5 and BR5 CTF tables of the Kingdom of the Netherlands in accordance with the UNFCCC reporting guidelines on BRs. The ERT concluded that the reported information mostly adheres to the UNFCCC reporting guidelines on BRs and that the BR5 and its CTF tables provide an overview of emissions and removals related to the Party's quantified economy-wide emission reduction target; assumptions, conditions and methodologies related to the attainment of the target; the progress of the Party towards achieving its target; and the Party's provision of support to developing country Parties.

132. In its NC8 the Kingdom of the Netherlands reported on its key national circumstances related to GHG emissions and removals, including government structure, population, geography, climate, economy, energy system, transport, industry, waste management, building stock and urban structure, agricultural landscape and forests.

133. The Kingdom of the Netherlands' total GHG emissions excluding LULUCF and including indirect CO₂ covered by its quantified economy-wide emission reduction target in 2020 were estimated to be 25.5 per cent below its 1990 level. Emissions peaked in 1996 and decreased thereafter. The changes in total emissions were driven mainly by factors such as a significant reduction in non-CO₂ industry emissions supported by the EU ETS, measures to increase building insulation, an increase in the use of highly efficient boilers, policies in the transport sector and a significant reduction in the amount of solid waste sent to landfill.

134. As reported in the BR5, under the Convention the Kingdom of the Netherlands committed to contributing to the achievement of the joint EU quantified economy-wide target of a 20 per cent reduction in emissions below the 1990 level by 2020. The target covers all sectors and CO₂, CH₄, N₂O, HFCs, PFCs and SF₆, expressed using GWP values from the AR4. Emissions and removals from the LULUCF sector are not included. The EU generally allows its member States to use units from the Kyoto Protocol mechanisms for compliance purposes up to an established limit and subject to a number of restrictions on the origin and the type of project. Under the ESD the Kingdom of the Netherlands has a target of reducing its emissions by 16 per cent below the 2005 level by 2020.

135. The EU has a joint 2030 emission reduction target of 55 per cent below the 1990 level. This will be primarily implemented through the EU ETS and ESR, which have targets to reduce emissions by 2030 by 62 and 40 per cent respectively compared with the 2005 level. Under the ESR, for 2021–2030 the Kingdom of the Netherlands' target is to reduce its

emissions by 36 per cent compared with the 2005 level. A proposal to align the Climate Act with the European Climate Law and include new targets in the 2022 government coalition agreement (reducing GHG emissions by at least 55 per cent below the 1990 level by 2030 and achieving carbon neutrality by 2050) is being considered by the parliament.

136. The ERT noted that the total GHG emissions of the EU excluding LULUCF do not exceed the emission level corresponding to the target in 2020, and thus that the EU has achieved its joint target. The ERT therefore concluded that the Kingdom of the Netherlands has met its 2020 commitment under the Convention through its contribution to achieving the joint target of the EU. See the report on the review of the NC8 and BR5 of the EU for further details. The ERT noted that the Party met its 2020 ESD target because its ESD emissions in 2020 do not exceed its AEA for 2020.

137. The GHG emission projections provided by the Kingdom of the Netherlands in its NC8 and BR5 correspond to the WEM and WAM scenarios. Under the WEM scenario, emissions in 2030 excluding LULUCF and including indirect CO₂ are projected to be 45.8 per cent below the 1990 level and 27.2 per cent below the 2020 level. Under the WAM scenario, emissions in 2030 are projected to be 45.9 per cent below the 1990 level and 27.4 per cent below the 2020 level.

138. The Kingdom of the Netherlands' main policy framework relating to energy and climate change is the National Climate Agreement. The 2019 Climate Act calls for a 49 per cent reduction in GHG emissions by 2030 and a 95 per cent reduction by 2050 compared with the 1990 level. Key policies in the energy sector, which include the energy tax on electricity and natural gas and the sustainable energy surcharge, a subsidy scheme to stimulate sustainable energy production and investment subsidies for small renewable energy systems, are projected to avoid 21.3 Mt CO₂ eq in emissions in 2025. Key policies in the buildings sector, which include the Building Decree, a renovation acceleration programme and a subsidy scheme for rental properties, the national insulation programme and the hybrid heat pump programme, have an estimated mitigation impact of 4.5 Mt CO₂ eq in 2025. Key policies in the transport sector, which include the promotion of more efficient personal transport, the electrification of vehicles and construction machinery, efficient logistics and sustainable fuels, are projected to bring about a mitigation impact of 2.6 Mt CO₂, while key policies in the industry sector, which include CO₂ pricing, an energy investment tax allowance scheme, a sustainable infrastructure programme and regional industry clusters, have an estimated mitigation impact of 2.0 Mt CO₂ in 2025.

139. The Kingdom of the Netherlands continued to provide climate financing to developing countries to, for example, facilitate access to renewable energy, halt deforestation, promote climate-smart agriculture, promote integrated water resources management and provide climate-resilient water, sanitation and hygiene services. A 2022 policy document entitled "Do what we do best" sets out the Party's foreign trade and development agenda; this is financed from the budget for foreign trade and development cooperation, which is annually approved by the parliament. It has increased its financial support provided to non-Annex I Parties by 22.0 per cent since the BR4; its public financial support provided to non-Annex I Parties in 2019–2020 totalled USD 1.37 billion. For those years, the Party provided more support for adaptation than for mitigation. The biggest share of support went to cross-cutting activities, projects and programmes in the agriculture, forestry, fishing, energy, transport, industry, water and sanitation sectors. An example of this support is phases I and II of the Sustainable Water Fund, which aimed to enhance water safety and reliability in developing countries.

140. The Kingdom of the Netherlands continued to provide support for technology development and transfer and capacity-building. Priority for technological support was given to projects supporting clean energy, water resource management, agricultural technologies and disaster risk reduction at the global level, as well as in countries such as in Bangladesh, Burundi, Egypt, Ethiopia, Ghana, Indonesia, Iraq, Jordan, Kenya, Niger and Uganda. Over time, the focus has remained the same. Priority for capacity-building support was given to projects and programmes relating to water resources and food security, renewable energy, disaster risk reduction, climate-smart agriculture and forestry, and emission reductions in countries such as Bangladesh, Egypt, Indonesia, Kenya, Mali and South Sudan. Capacity-building support is focused on individuals, institutions and systems. Over time, the focus has remained the same.

141. In its NC8 the Kingdom of the Netherlands provided the required information on the expected impacts of climate change in the country; the adaptation policies covering regional, sectoral and cross-sectoral vulnerabilities and considerations; and an outline of the action taken to implement Article 4, paragraph 1(b) and (e), of the Convention with regard to adaptation. It provided comprehensive information on vulnerabilities and adaptation action in relation to water and spatial management; biodiversity and natural ecosystems; agriculture, horticulture and fisheries; health and welfare; recreation and tourism; infrastructure (road, rail, water and aviation); energy, information technology and telecommunications; and public safety and security. Under the National Climate Adaptation Strategy, adaptation now covers vulnerable sectors beyond the water domain, with expanded measures in the areas of agriculture, horticulture and fisheries; water and spatial management, mainly through the Delta Programme; biodiversity and natural ecosystems; and infrastructure.

142. In its NC8 the Kingdom of the Netherlands provided information on its activities relating to research and systematic observation covering domestic, regional and global activities. These activities support oceanic, terrestrial and satellite observation and extensive research activities involving universities and organizations in both developing and developed countries. The Dutch Research Council and the Royal Netherlands Academy of Arts and Sciences coordinate the country's contributions to international research on climate systems.

143. In its NC8 the Kingdom of the Netherlands provided information on its actions relating to education, training and public awareness. Its actions involve an extensive range of actors, including young people, universities, the general public, non-governmental organizations and government agencies and departments. The general policy to promote education, training and public awareness in the Party is aimed at introducing sustainability into the curricula at all levels of education as per the Constitution; fostering a network of initiatives to raise awareness of sustainable development among organizations and educational institutions; providing funding to institutions that promote climate awareness; organizing events to facilitate the implementation of these actions; and involving youth in all aspects of education, training and public awareness.

144. In the course of the review, the ERT formulated the following recommendations for the Kingdom of the Netherlands to improve its adherence to the UNFCCC reporting guidelines on NCs in its next NC:

- (a) To improve the completeness of its reporting by:
 - (i) Reporting on the total effect of implemented and adopted PaMs by gas for the most recent inventory year and for all subsequent years that end in either a zero or a five, covering at least 15 years after the most recent inventory year (see issue 4 in table I.2);
 - (ii) Reporting on the indicators used to track the provision of technological and capacity-building support to non-Annex I Parties, if appropriate (see issue 1 in table I.3);
 - (iii) Reporting on how it has provided capacity-building support that responds to existing and emerging capacity-building needs identified by non-Annex I Parties in the areas of mitigation, adaptation, and technology development and transfer (see issue 2 in table I.3);
- (b) To improve the transparency of its reporting by:
 - (i) Reporting NF₃ projections (see issue 1 in table I.2);
 - (ii) Providing information on the specific countries or organizations in regions that have planned or implemented projects to build research and systematic observation capacity in developing countries (see issue 1 in table I.4).

145. In the course of the review of the Kingdom of the Netherlands' NC8, the ERT noted the following findings relating to adherence to the reporting guidelines for supplementary information:

- (a) Issues with the completeness of its reporting relating to:

(i) Information provided on institutional arrangements and decision-making procedures in place for coordinating activities relating to participation in the mechanisms under Articles 6, 12 and 17 of the Kyoto Protocol, including the participation of legal entities (see issue 1 in table I.5);

(ii) Information on its financial contributions to the Adaptation Fund (see issue 3 in table I.5);

(b) Issues with the transparency of its reporting relating to information on national legislative arrangements or administrative procedures that seek to ensure that the implementation of activities under Article 3, paragraph 3, and any elected activities under Article 3, paragraph 4, of the Kyoto Protocol also contribute to the conservation of biodiversity and the sustainable use of natural resources (see issue 2 in table I.5).

146. In the course of the review of the Kingdom of the Netherlands' BR5, the ERT noted the following findings relating to adherence to the UNFCCC reporting guidelines on BRs:

(a) Issues with the completeness of its reporting relating to:

(i) Information on changes in its domestic institutional arrangements, including institutional, legal, administrative and procedural arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of progress towards its economy-wide emission reduction target (see issue 1 in table II.2);

(ii) GHG emissions for the base year (1990) in CTF table 4 (see issue 1 in table II.3);

(iii) Information on the indicators used to track the provision of technological and capacity-building support to non-Annex I Parties, if appropriate (see issue 1 in table II.5);

(iv) Information on how it has provided capacity-building support that responds to the existing and emerging needs identified by non-Annex I Parties in the areas of mitigation, adaptation, and technology development and transfer (see issue 2 in table II.5);

(b) Issues with the transparency of its reporting relating to:

(i) The inclusion of NF₃ in the gases covered in its target in CTF tables 2(b) and 2(c) given that it is not included in the EU target (see issue 1 in table II.1);

(ii) Estimates of mitigation impacts of mitigation actions for 2020 in CTF table 3 (see issue 2 in table II.2);

(iii) Total GHG emissions (excluding LULUCF) for 2013–2020 in CTF table 4 (see issue 2 in table II.3);

(iv) Information on NF₃ projections (see issue 1 in table II.4).

Annex I

Assessment of adherence to the reporting guidelines for the eighth national communication of the Kingdom of the Netherlands

Tables I.1–I.5 summarize the ERT assessment of adherence to the UNFCCC reporting guidelines on NCs for the Kingdom of the Netherlands' NC8.

Table I.1

Findings on policies and measures from the review of the eighth national communication of the Kingdom of the Netherlands

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation or encouragement
1	Reporting requirement specified in paragraph 13 Issue type: transparency Assessment: encouragement	In its NC8, the Party provided detailed information on the assessment of economic consequences of response measures. However, the Party did not provide detailed and transparent information on the social consequences of response measures. During the review, the Party provided examples of the social consequences of response measures, such as the concerns of farmers, businesses and individuals (e.g. in regions facing energy poverty) in complying with the climate actions. The ERT encourages the Kingdom of the Netherlands to improve the transparency of its reporting by including detailed information, with examples, on the social consequences of response measures in its next NC.

Note: Paragraph number listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on NCs. The reporting on the requirements not included in this table is considered to be complete and transparent, and thus adheres to the UNFCCC reporting guidelines on NCs.

Table I.2

Findings on projections including aggregate effects of policies and measures reported in the eighth national communication of the Kingdom of the Netherlands

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation or encouragement
1	Reporting requirement specified in paragraph 32 Issue type: transparency Assessment: recommendation	The Party did not report NF ₃ projections separately in its NC8. The Party explained that they cannot be reported separately in the inventory owing to national circumstances and therefore are included in the PFC emissions (NC8, p.74). The Party did not explain in the NC8 how NF ₃ is dealt with in the projections. During the review, the Kingdom of the Netherlands explained that it did not report NF ₃ separately for data confidentiality reasons. The Party further explained that NF ₃ emissions are included in the PFC emissions under semiconductor manufacture, which form the basis of the projections. The ERT recommends that the Kingdom of the Netherlands improve the transparency of its reporting by providing NF ₃ projections separately. If it is not possible to do so, the ERT recommends that the Party provide a justification for not projecting these emissions separately and an explanation of how the aggregated emissions are calculated including NF ₃ (e.g. confirmation of conversion into CO ₂ eq).
2	Reporting requirement specified in paragraph 32 Issue type: completeness Assessment: encouragement	The Party did not report projections of carbon monoxide, nitrogen oxide, non-methane volatile organic compounds and sulfur oxide emissions in its NC8. The Party explained in the NC8 (pp.153–154) that projections for air pollutants are not yet available but would be published in 2023. During the review, the Kingdom of the Netherlands provided the projections of nitrogen oxide, non-methane volatile organic compounds and sulfur oxide emissions for 2030, which are included in the recently published air pollutant projections (Netherlands Environmental Assessment Agency, 2023). The ERT encourages the Party to include in its next NC the projections of emissions of carbon monoxide, nitrogen oxides, non-methane volatile organic compounds and sulfur oxides.

No.	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
3	Reporting requirement specified in paragraph 34 Issue type: completeness Assessment: encouragement	The Party did not report projections for 2025 and 2035 in its NC8 and thus did not report a complete time series of projection results for years that end in either a zero or a five, extending at least 15 years from the most recent inventory year (2020). During the review, the Party provided projections for 2025 and 2035, explaining that although the 2035 projections are model results consistent with the data provided in CTF table 6(a), they are not part of the formal projections provided in the national projection report, which forms the basis of the NC8. The ERT encourages the Kingdom of the Netherlands to report a complete time series of projections for years that end in either a zero or a five, extending at least 15 years from the most recent inventory year.
4	Reporting requirement specified in paragraph 37 Issue type: completeness Assessment: recommendation	In its NC8, the Party reported an estimate of the total effects of implemented and planned policy measures for 2025 and 2030, compared with 2020, which is the latest year for which historical data are available. However, it did not report such estimates by gas. In addition, the Party did not report an estimate of the total effects of implemented PaMs for the most recent inventory year (2020) or for 2035. During the review, the Party provided information on the total effect of PaMs by type of GHG, clarifying that most of the impacts relate to CO ₂ . The Party further explained that total impacts for 2035 cannot be estimated owing to the unavailability of the necessary data on energy savings after 2030. The ERT recommends that the Kingdom of the Netherlands present the effect of implemented and adopted PaMs in accordance with the WEM definition by gas in the most recent inventory year and in all subsequent years that end in either a zero or a five, extending at least 15 years from the most recent inventory year.
5	Reporting requirement specified in paragraph 42 Issue type: completeness Assessment: encouragement	In its NC8, the Party reported limited information on differences in policies and other input assumptions used for the projections reported in the NC8 and those reported in the NC7. The Party reported in its NC8 (p.401) that the modelling framework has been stable since the NC7. In addition, the Party did not report on differences in results between the NC7 and the NC8. During the review, the Kingdom of the Netherlands explained the differences in policies and price-related input assumptions used for the projections reported in the NC8 in more detail. The Party also provided quantitative information on the differences in projection results. The Party explained that the projected GHG emissions for 2030 have decreased from 154 to 122–128 Mt CO ₂ eq, mainly as a result of the inclusion of the effects of the 2019 National Climate Agreement, the proposed 2022 National Programme of Climate and significantly higher EU ETS carbon prices. The ERT encourages the Kingdom of the Netherlands to report the main differences in results between the projections reported in the current NC and those reported in previous NCs.

Note: Paragraph number listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on NCs. The reporting on the requirements not included in this table is considered to be complete and transparent, and thus adheres to the UNFCCC reporting guidelines on NCs.

Table I.3

Findings on financial, technological and capacity-building support from the review of the eighth national communication of the Kingdom of the Netherlands

No.	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
1	Reporting requirement specified in paragraph 49 Issue type: completeness Assessment: recommendation	The Kingdom of the Netherlands did not report in its NC8 information on the indicators used to track the provision of technology transfer and capacity-building support. During the review, the Kingdom of the Netherlands explained that it is currently reviewing the reporting indicators for technology transfer and capacity-building (both quantitative and qualitative) in the light of a recently introduced information and communication technology system for activity cycle management. The Party clarified that although the new system is intended to report on climate-related capacity-building and technology transfer programmes, it will take time before the system is fully operational

No.	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
2	Reporting requirement specified in paragraph 59 Issue type: completeness Assessment: recommendation	<p>The ERT recommends that the Kingdom of the Netherlands provide a description of the indicators used to track the provision of technological and capacity-building support to non-Annex I Parties.</p> <p>In its NC8, the Party did not report on how it has provided capacity-building support that responds to existing and emerging capacity-building needs identified by non-Annex I Parties in the areas of mitigation, adaptation and technology development and transfer.</p> <p>During the review, the Kingdom of the Netherlands clarified that it has worked with a multitude of actors, including national, regional and local authorities, which have their own processes to ensure that their activities meet the needs of their target countries. The Party further explained that it only approves finance for activities that meet the needs of those target countries, institutions and populations. These activities have to be based on elaborate context, policy and stakeholder analyses, on risk, vulnerability and opportunity assessments, and on evidence-based theories of change.</p> <p>The ERT recommends that the Party provide information, to the extent possible, on how it has provided capacity-building support that responds to existing and emerging capacity-building needs identified by non-Annex I Parties in the areas of mitigation, adaptation and technology development and transfer, for example by providing examples of how the implementing agencies meet those needs.</p>

Note: Paragraph number listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on NCs. The reporting on the requirements not included in this table is considered to be complete and transparent, and thus adheres to the UNFCCC reporting guidelines on NCs.

Table I.4

Findings on research and systematic observation from the review of the eighth national communication of the Kingdom of the Netherlands

No.	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
1	Reporting requirement specified in paragraph 61 Issue type: transparency Assessment: recommendation	<p>The Kingdom of the Netherlands reported in its NC8 that climate analysis and data projects to build capacity on research and systematic observation in Africa, the Pacific and the Caribbean are being planned or implemented. However, the Party did not report on the specific countries or organizations in the regions where the projects are planned or implemented.</p> <p>During the review, the Kingdom of the Netherlands provided information on the specific countries and organizations where capacity-building activities are being conducted, which include the Caribbean Institute for Meteorology and Hydrology, the Secretariat of the Pacific Regional Environmental Programme, the Indian Ocean Commission, the South African Development Community Service Centre, the Economic Community of Central African States, the Agriculture, Hydrology and Meteorology Regional Centre in Niamey, Niger, the Intergovernmental Authority on Development Climate Prediction and Applications Centre and the African Centre of Meteorological Application for Development.</p> <p>The ERT recommends that the Party improve the transparency of its reporting by including the information on specific countries or organizations in the regions where the projects to build capacity in research and systematic observation in developing countries are planned or implemented.</p>
2	Reporting requirement specified in paragraph 66 Issue type: completeness Assessment: encouragement	<p>In its NC8, the Party did not provide information on highlights, innovations and significant efforts made with regard to socioeconomic analysis, including both the impacts of climate change and response options.</p> <p>During the review, the Kingdom of the Netherlands explained that response options on water security, freshwater availability and spatial planning were formulated by the Delta Committee on the basis of the advice and the socioeconomic information delivered by the Netherlands Environmental Assessment Agency and by Statistics Netherlands.</p> <p>The ERT reiterates the previous encouragement for the Party to provide information on highlights, innovations and significant efforts made with regard to socioeconomic analysis, including both the impacts of climate change and response options.</p>

No.	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
3	Reporting requirement specified in paragraph 67 Issue type: transparency Assessment: encouragement	<p>In its NC8, the Party reported on the national plans, programmes and support for ground- and space-based climate observing systems, including support provided to developing countries to establish and maintain observation systems and related data and monitoring systems. However, the Party did not report on the current status of these activities.</p> <p>During the review, the Party provided information on the current status of the activities relating to the provision of support to developing countries to establish and maintaining observation systems and related data and monitoring systems. The Party explained that the Paramaribo Atmospheric Observatory in Suriname was established to measure ozone profiles at regular intervals, has been operational since 1999 and is maintained by the Royal Netherlands Meteorological Institute. The tropospheric monitoring instrument on board the Copernicus Sentinel-5 Precursor satellite is still operational. In addition, the Kingdom of the Netherlands mentioned that it supports the Global Basic Observing Network, which defines and monitors observation networks worldwide and in which the Royal Netherlands Meteorological Institute is involved as a peer adviser. The Kingdom of the Netherlands is also currently finalizing an agreement to support the Systematic Observations Financing Facility, which provides support to small island developing States and the LDCs in fulfilling requirements under the Global Basic Observing Network.</p> <p>The ERT reiterates the previous encouragement for the Party to improve the transparency of its reporting by including information on the status of national plans, programmes and support for ground- and space-based climate observing systems, including support provided to developing countries for establishing and maintaining observation systems and related data and monitoring systems.</p>

Note: Paragraph number listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on NCs. The reporting on the requirements not included in this table is considered to be complete and transparent, and thus adheres to the UNFCCC reporting guidelines on NCs.

Table I.5

Findings on minimization of adverse impacts and supplementary information related to the Kyoto Protocol reported in the eighth national communication of the Kingdom of the Netherlands

No.	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation</i>
1	Reporting requirement specified in paragraph 37 Issue type: completeness Assessment: recommendation	<p>In its NC8, the Party did not include a description of the institutional arrangements and decision-making procedures to coordinate activities relating to participation in the mechanisms under Articles 6, 12 and 17 of the Kyoto Protocol, including the participation of legal entities.</p> <p>During the review, the Party stated that it does not plan to acquire or use international credits to comply with the second commitment period of the Kyoto Protocol and that, as such, there are no institutional arrangements in place to coordinate such activities.</p> <p>The ERT recommends that the Party include a description of the institutional arrangements and decision-making procedures to coordinate activities relating to participation in the mechanisms under Articles 6, 12 and 17 of the Kyoto Protocol, including the participation of legal entities. If it does not plan to acquire or use international credits to comply with the second commitment period of the Kyoto Protocol, the ERT recommends that the Party transparently explain the reasons for not reporting such information. The ERT concludes that this potential problem of a mandatory nature does not influence the Party’s ability to fulfil its commitments for the second commitment period of the Kyoto Protocol.</p>

No.	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation</i>
2	<p>Reporting requirement specified in paragraph 38</p> <p>Issue type: transparency</p> <p>Assessment: recommendation</p>	<p>In its NC8, the Party provided limited information on the national legislative arrangements and administrative procedures that seek to ensure that the implementation of activities under Article 3, paragraph 3, and any elected activities under Article 3, paragraph 4, of the Kyoto Protocol also contribute to the conservation of biodiversity and the sustainable use of natural resources. The Party included only the names of national legislative arrangements, namely the Forest Act and the Flora and Fauna Act, without providing a further description and/or weblinks for these Acts. Further, the Party did not provide information on sustainable forest management principles, particularly how they seek to ensure that the implementation of Article 3, paragraph 3, and Article 3, paragraph 4, of the Kyoto Protocol contributes to the conservation of biodiversity and sustainable use of natural resources.</p> <p>During the review, the Party explained that the information provided in the NC8 is partly outdated and provided updated information (see para. 54 of this document).</p> <p>The ERT recommends that the Party improve the transparency of its reporting by providing updated information on the national legislative arrangements and administrative procedures that seek to ensure that the implementation of activities under Article 3, paragraph 3, and any elected activities under Article 3, paragraph 4, of the Kyoto Protocol also contribute to the conservation of biodiversity and sustainable use of natural resources. The ERT concludes that this potential problem of a mandatory nature does not influence the Party’s ability to fulfil its commitments for the second commitment period of the Kyoto Protocol.</p>
3	<p>Reporting requirement specified in paragraph 43</p> <p>Issue type: completeness</p> <p>Assessment: recommendation</p>	<p>In its NC8, the Party did not provide information on its financial contributions to the Adaptation Fund.</p> <p>During the review, the Party explained that it does not provide contributions to the Adaptation Fund because it prefers to support the LDCs and therefore specifically supports adaption through the LDCF.</p> <p>The ET recommends that the Party provide information on its financial contributions to the Adaptation Fund or clearly explain that it does not provide any such contributions. The ERT concludes that this potential problem of a mandatory nature does not influence the Party’s ability to fulfil its commitments for the second commitment period of the Kyoto Protocol.</p>

Note: Item listed under reporting requirement refers to the relevant paragraph of the reporting guidelines for supplementary information. The reporting on the requirements not included in this table is considered to be complete and transparent, and thus adheres to the reporting guidelines for supplementary information.

Annex II

Assessment of adherence to the reporting guidelines for the fifth biennial report of the Kingdom of the Netherlands

The BR5 of the Kingdom of the Netherlands is the final BR under the measurement, reporting and verification system established under the Convention.¹ Nevertheless, ERTs continue to provide recommendations and encouragements to Parties on completeness, transparency and adherence to the UNFCCC reporting guidelines on BRs. Parties may find these recommendations and encouragements relevant, as appropriate, when preparing their initial biennial transparency report under the enhanced transparency framework of the Paris Agreement. Tables II.1–II.5 summarize the ERT assessment of adherence to the UNFCCC reporting guidelines on BRs for the Kingdom of the Netherlands' BR5.

Table II.1

Findings on the quantified economy-wide emission reduction target from the review of the fifth biennial report of the Kingdom of the Netherlands

No.	Reporting requirement and issue type	Description of the finding with recommendation or encouragement
1	Reporting requirement specified in paragraph 5 Issue type: transparency Assessment: recommendation	<p>The Party reported the base year for NF₃ in CTF table 2(b) and its GWP value in CTF table 2(c). However, the ERT notes that NF₃ is excluded from the EU target for 2020, to which the Kingdom of the Netherlands is contributing as an EU member State. Further, the Party did not report the possible scale of contribution for ERUs and carry-over units (blank cells) in CTF table 2(e)I and did not provide any explanation in the BR or CTF table 2(e)I.</p> <p>During the review, the Party explained that the emissions of NF₃ are included in the sum of emissions of fluorinated gases in its GHG inventory and cannot be reported separately for confidentiality reasons. As such, NF₃ is implicitly included in the national target. The Party further explained that it did not use any ERUs or carry-over units to achieve its target and, as such, the corresponding blank cells in CTF table 2(e)I should be considered equivalent to 0. During the review, the Party made a revised submission of CTF tables in which it reported the values of the possible scale of the contribution for ERUs and carry-over units as “0.00”.</p> <p>The ERT recommends that the Party improve the transparency of its reporting by excluding NF₃ from the gases covered in its target in CTF tables 2(b) and 2(c) given that it is not included in the EU target.</p>

Note: Item listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on BRs. The reporting on the requirements not included in this table is considered to be complete and transparent, and thus adheres to the UNFCCC reporting guidelines on BRs.

Table II.2

Findings on mitigation actions and their effects from the review of the fifth biennial report of the Kingdom of the Netherlands

No.	Reporting requirement and issue type	Description of the finding with recommendation or encouragement
1	Reporting requirement specified in paragraph 7 Issue type: completeness	In its NC8 (pp.139–142), which is cross-referenced in the BR5, the Kingdom of the Netherlands reported information on changes in its domestic institutional arrangements, including institutional, legal, administrative and procedural arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of the progress towards its economy-wide emission reduction target. However, the Party

¹ The Conference of the Parties, by decision 1/CP.24, decided that the final BRs shall be those submitted to the secretariat no later than 31 December 2022 and reaffirmed that, for Parties to the Paris Agreement, following the submission of the final BR, the modalities, procedures and guidelines contained in the annex to decision 18/CMA.1 will supersede the measurement, reporting and verification system established under decision 1/CP.16, paras. 40–47 and 60–64, and decision 2/CP.17, paras. 12–62.

No.	Reporting requirement and issue type	Description of the finding with recommendation or encouragement
	Assessment: recommendation	<p>did not report information on changes in such domestic institutional arrangements since the last submission.</p> <p>During the review, the Party explained that the domestic institutional arrangements have not changed significantly since 2017, with the exception of the adoption of the Climate Act in 2019, which provides the legal basis for evaluating and reporting on progress towards achieving national climate targets, including the <i>Climate and Energy Outlook of the Netherlands 2022</i>, which is the basis for the projections included in the NC8 and BR5, and the 2022 <i>Climate Policy Monitor</i>, which monitors progress to date. As a result of the adoption of the Climate Act, the Social and Economic Council Standing Committee, which was previously responsible for overseeing the progress, is no longer in place.</p> <p>The ERT recommends that the Party provide information on all changes in the domestic institutional arrangements.</p>
2	<p>Reporting requirement specified in CTF table 3</p> <p>Issue type: completeness</p> <p>Assessment: recommendation</p>	<p>In its BR5, the Kingdom of the Netherlands did not report the impacts of mitigation actions for 2020 in CTF table 3 and did not explain the reasons thereof for that decision in the BR5 or CTF table 3.</p> <p>During the review, the Party explained that it calculated the mitigation impacts of PaMs using the projections available from the <i>Climate and Energy Outlook of the Netherlands 2022</i>, which does not include quantitative estimations on the impact of individual PaMs, but rather estimates the collective impact of PaMs on the individual sectors or subsectors. This was done because it is difficult to estimate the mitigation impacts of individual PaMs as well as to avoid double counting of mitigation impacts. The mitigation impacts of PaMs for 2020 could not be estimated because of the unavailability of projections for 2020. During the review, the Party submitted a revised set of CTF tables in which it used the notation key “NE” to report the mitigation impacts of all the mitigation actions for 2020 in CTF table 3 and included a footnote to explain that the notation key “NE” stands for “not estimated”. However, the ERT noted that the Party did not include the explanation provided to the ERT during the review in the BR5 and/or in the custom footnote to CTF table 3 to further improve the transparency of its reporting.</p> <p>The ERT recommends that the Kingdom of the Netherlands provide estimates of mitigation impacts of mitigation actions for 2020 or provide an explanation for not reporting them in its BR and/or in CTF table 3.</p>

Note: Item listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on BRs or to the CTF table number from the UNFCCC reporting guidelines on CTF tables. The reporting on the requirements not included in this table is considered to be complete and transparent, and thus adheres to the UNFCCC reporting guidelines on BRs.

Table II.3

Findings on estimates of emission reductions and removals and on the use of units from market-based mechanisms and land use, land-use change and forestry from the review of the fifth biennial report of the Kingdom of the Netherlands

No.	Reporting requirement and issue type	Description of the finding with recommendation or encouragement
1	<p>Reporting requirement specified in paragraph 9</p> <p>Issue type: completeness</p> <p>Assessment: recommendation</p>	<p>In CTF table 4, the Party did not report GHG emissions for the base year (1990) and did not provide any explanation in the BR5 or CTF table 4.</p> <p>During the review, the Party explained that CTF table 4 reports on the progress towards the achievement of the quantified economy-wide emission reduction target. As described in chapter 3 of the BR5, the Kingdom of the Netherlands is committed to jointly meeting the EU economy-wide emission reduction target under the Convention. Therefore, CTF table 4 only reports on the emissions covered by the ESD and not the national total emissions. The Party further explained that, given that there is no information available on the ESD emissions for 1990, it did not report those emissions in CTF table 4 and left the corresponding cells blank. During the review, the Party resubmitted the CTF tables, in which it included a custom footnote to CTF table 4 providing the above-mentioned explanation. However, the ERT notes that, as per the UNFCCC reporting guidelines on BRs, Parties are required to report their total GHG emissions (excluding LULUCF) for their base year in CTF table 4 and not the GHG emissions covered by the ESD.</p>

No.	Reporting requirement and issue type	Description of the finding with recommendation or encouragement
		The ERT recommends that the Party report the total GHG emissions for 1990 in CTF table 4.
2	Reporting requirement specified in paragraph 10 Issue type: transparency Assessment: recommendation	<p>The Party reported its GHG emissions under the ESD instead of its total GHG emissions (excluding LULUCF) for 2013–2020 in CTF table 4.</p> <p>During the review, the Party explained that CTF table 4 reports on the progress towards the achievement of quantified economy-wide emission reduction targets. As described in chapter 3 of the BR5, the Kingdom of the Netherlands is committed to jointly meeting the EU economy-wide emission reduction target under the Convention. Therefore, CTF table 4 only reports on the emissions covered by the ESD and not the national total.</p> <p>During the review, the Party resubmitted the CTF tables, in which it included a custom footnote to CTF table 4 providing the above-mentioned explanation. However, the ERT notes that, as per the UNFCCC reporting guidelines on BRs, Parties are required to report their total GHG emissions (excluding LULUCF) for each reported year (2013–2020) in CTF table 4 and not the GHG emissions covered by the ESD.</p> <p>The ERT recommends that the Party improve the transparency by reporting the total GHG emissions (excluding LULUCF) for 2013–2020 in CTF table 4.</p>

Note: Item listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on BRs. The reporting on the requirements not included in this table is considered to be complete and transparent, and thus adheres to the UNFCCC reporting guidelines on BRs.

Table II.4

Findings on projections reported in the fifth biennial report of the Kingdom of the Netherlands

No.	Reporting requirement and issue type	Description of the finding with recommendation or encouragement
1	Reporting requirement specified in paragraph 32 Issue type: transparency Assessment: recommendation	<p>The Party did not report NF₃ projections separately in its BR5. The Party explained that they cannot be reported separately in the inventory owing to national circumstances and therefore are included in the PFC emissions (NC8, p.74). The Party did not explain in the BR5 or in the CTF tables how NF₃ is dealt with in the projections.</p> <p>During the review, the Kingdom of the Netherlands explained that it did not report NF₃ separately for data confidentiality reasons. The Party further explained that NF₃ emissions are included in the PFC emissions under semiconductor manufacture, which are then projected further.</p> <p>The ERT recommends that the Kingdom of the Netherlands improve the transparency of its reporting by providing NF₃ projections separately. If it is not possible to do so, the ERT recommends that the Party provide a justification for not projecting these emissions separately, explain where they are included in the CTF tables, use the appropriate notation key and explain how the aggregated emissions are calculated including NF₃ (e.g. confirmation of conversion into CO₂ eq).</p>
2	Reporting requirement specified in paragraph 32 Issue type: completeness Assessment: encouragement	<p>The Party did not report projections of carbon monoxide, nitrogen oxide, non-methane volatile organic compounds or sulfur oxide emissions in its BR5. The Party explained in its NC8 (pp.153–154), which is referred to in the BR5, that projections for air pollutants are not yet available but would be published in 2023.</p> <p>During the review, the Kingdom of the Netherlands provided projections of nitrogen oxide, non-methane volatile organic compounds and sulfur oxide emissions for 2030, which are included in the recently published air pollutant projections (Netherlands Environmental Assessment Agency, 2023).</p> <p>The ERT reiterates the previous encouragement (table 10, issue 5, in document FCCC/TRR.4/NLD) for the Party to include the projections of emissions of carbon monoxide, nitrogen oxides, non-methane volatile organic compounds and sulfur oxides.</p>

Note: Item listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on NCs, as per para. 11 of the UNFCCC reporting guidelines on BRs. The reporting on the requirements not included in this table is considered to be complete and transparent, and thus adheres to the UNFCCC reporting guidelines on NCs and on BRs.

Table II.5

Findings on provision of financial, technological and capacity-building support to developing country Parties from the review of the fifth biennial report of the Kingdom of the Netherlands

No.	<i>Reporting requirement and issue type</i>	<i>Description of the finding with recommendation or encouragement</i>
1	Reporting requirement specified in paragraph 14 Issue type: completeness Assessment: recommendation	<p>The Kingdom of the Netherlands did not report in its BR5 information on indicators used to track the provision of technology transfer and capacity-building support to non-Annex I Parties.</p> <p>During the review, the Kingdom of the Netherlands explained that it is currently reviewing the reporting indicators for technology transfer and capacity-building (both quantitative and qualitative) in the light of a recently introduced information and communication technology system for activity cycle management. The Party clarified that, although the new system is designed to report on climate-related capacity-building and technology transfer programmes, it will take time before the system is fully operational.</p> <p>The ERT reiterates the previous recommendation (table 13, issue 1, in document FCCC/TRR.4/NLD) that the Kingdom of the Netherlands provide information on indicators used to track the provision of technology transfer and capacity-building support to non-Annex I Parties.</p>
2	Reporting requirement specified in paragraph 23 Issue type: completeness Assessment: recommendation	<p>In its BR5, the Party did not report on how it has provided capacity-building support that responds to the existing and emerging capacity-building needs identified by non-Annex I Parties in the areas of mitigation, adaptation, and technology development and transfer.</p> <p>During the review, the Kingdom of the Netherlands clarified that it works with a multitude of actors, including national, regional and local authorities, which have their own processes to ensure that their activities meet the needs of their target countries. It also explained that it only approves finance for activities that meet the needs of those target countries, institutions and populations. These activities must be developed on the basis of elaborate context, policy and stakeholder analyses, risk, vulnerability and opportunity assessments, and evidence-based theories of change.</p> <p>The ERT recommends that the Party provide, to the extent possible, information on how it has provided capacity-building support that responds to the existing and emerging needs identified by non-Annex I Parties in the areas of mitigation, adaptation, and technology development and transfer, such as by providing examples of efforts taken by the implementing agencies in this regard.</p>

Note: Item listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on BRs. The reporting on the requirements not included in this table is considered to be complete and transparent, and thus adheres to the UNFCCC reporting guidelines on BRs.

Annex III

Documents and information used during the review

A. Reference documents

2022 GHG inventory submission of the Netherlands. Available at <https://unfccc.int/process-and-meetings/transparency-and-reporting/reporting-and-review-under-the-convention/national-inventory-submissions-2022>.

BR4 of the Netherlands. Available at <https://unfccc.int/BR4>.

BR5 CTF tables of the Netherlands. Available at <https://unfccc.int/BR5>.

BR5 of the EU. Available at <https://unfccc.int/BR5>.

BR5 of the Netherlands. Available at <https://unfccc.int/BR5>.

“Common tabular format for ‘UNFCCC biennial reporting guidelines for developed country Parties’”. Annex to decision 19/CP.18. Available at <https://unfccc.int/resource/docs/2012/cop18/eng/08a03.pdf>.

“Compilation of economy-wide emission reduction targets to be implemented by Parties included in Annex I to the Convention”. FCCC/SBSTA/2014/INF.6. Available at <http://unfccc.int/resource/docs/2014/sbsta/eng/inf06.pdf>.

European Green Deal. European Commission document COM(2019) 640 final. Available at https://ec.europa.eu/info/files/communication-european-green-deal_en.

“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/2019/13/Add.1. Available at <https://unfccc.int/documents/210471>.

“Guidelines for the preparation of the information required under Article 7 of the Kyoto Protocol”. Annex to 15/CMP.1. Available at <https://unfccc.int/documents/4253>.

“Guidelines for the preparation of the information required under Article 7 of the Kyoto Protocol”. Annex III to decision 3/CMP.11. Available at <https://unfccc.int/documents/9101>.

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NC8 of the EU. Available at <https://unfccc.int/NC8>.

NC8 of the Netherlands. Available at <https://unfccc.int/NC8>.

Report on the individual review of the annual submission of the Netherlands submitted in 2019. FCCC/ARR/2019/NLD. Available at <https://unfccc.int/process-and-meetings/transparency-and-reporting/reporting-and-review-under-the-convention/greenhouse-gas-inventories-annex-i-parties/inventory-review-reports/inventory-review-reports-2019>.

Report on the technical review of the BR4 of the Netherlands. FCCC/TRR.4/NLD. Available at <https://unfccc.int/review-reports-ncs-brs>.

Report on the technical review of the NC8 and the technical review of the BR5 of the EU. FCCC/IDR.8/EU–FCCC/TRR.5/EU. Available at <https://unfccc.int/documents/630393>.

“UNFCCC biennial reporting guidelines for developed country Parties”. Annex I to decision 2/CP.17. Available at <http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf>.

B. Additional information provided by the Party

Responses to questions during the review were received from Jorieke Rienstra, (Netherlands Enterprise Agency), including additional material. The following references were provided by the Netherlands and may not conform to UNFCCC editorial style as some have been reproduced as received:

Adriaan van der Welle. 2021. *BESCHRIJVING KEV-ONZEKERHEIDSMODEL*. Den Haag: Planbureau voor de Leefomgeving. Available at https://www.pbl.nl/sites/default/files/downloads/pbl-2021-modelbeschrijving-kev-onzekeerheidsmodel_4766.pdf.

Netherlands Enterprise Agency. 2022. *Climate Policy Monitor*. Available at <https://www.rijksoverheid.nl/>.

Netherlands Environmental Assessment Agency. 2023. *Climate and Energy Outlook of the Netherlands 2022*. Available at <https://www.pbl.nl/en/publications/climate-and-energy-outlook-of-the-netherlands-2022>.

Netherlands Environmental Assessment Agency, in collaboration with RIVM and TNO and WUR. 2023. *Geraamde Ontwikkelingen in Nationale Emissies van Luchtverontreinigende Stoffen 2023. Rapportage bij de Klimaat- en Energieverkenning 2022*. Den Haag: Planbureau voor de Leefomgeving. Available at https://www.pbl.nl/sites/default/files/downloads/pbl-2023-geraamde-ontwikkelingen-in-nationale-emissies-van-luchtverontreinigende-stoffen-2023_4930.pdf.
