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Report on the technical review of the third biennial report of the Netherlands

Developed country Parties were requested by decision 2/CP.17 to submit their third biennial report to the secretariat by 1 January 2018. This report presents the results of the technical review of the third biennial report 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".

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Contents

Abbreviations and acronyms

AEA	annual emission allocation
AR4	Fourth Assessment Report of the Intergovernmental Panel on Climate Change
BR	biennial report
CDM	clean development mechanism
CH_4	methane
CO_2	carbon dioxide
CO_2 eq	carbon dioxide equivalent
CTF	common tabular format
ERT	expert review team
ESD	effort-sharing decision
EU	European Union
EU ETS	European Union Emissions Trading System
F-gas	fluorinated gas
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
LULUCF	land use, land-use change and forestry
NA	not applicable
NC	national communication
NEV 2017	National Energy Outlook 2017
NF_3	nitrogen trifluoride
NO	not occurring
non-Annex I Party	Party not included in Annex I to the Convention
non-ETS sectors	sectors not covered by the European Union Emissions Trading System
N_2O	nitrous oxide
ODA	official development assistance
PaMs	policies and measures
PFC	perfluorocarbon
SDE+	Stimulation for Sustainable Energy Production
SF_6	sulfur hexafluoride
UNFCCC reporting guidelines on BRs	"UNFCCC biennial reporting guidelines for developed country Parties"
WAM	'with additional measures'
WEM	'with measures'
WOM	'without measures'
2006 IPCC Guidelines	*2006 IPCC Guidelines for National Greenhouse Gas Inventories*

I. Introduction and summary

A. Introduction

1. This is a report on the in-country technical review of the BR3[1] 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" (annex to decision 13/CP.20).

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

3. The review was conducted from 5 to 10 March 2018 in The Hague by the following team of nominated experts from the UNFCCC roster of experts: Ms. Buket Akay (Turkey), Ms. Irina Atamuradova (Turkmenistan), Mr. Jozsef Feiler (Hungary), Ms. Olia Glade (New Zealand) and Mr. Mahendra Kumar (Fiji). Ms. Glade and Mr. Kumar were the lead reviewers. The review was coordinated by Ms. Inkar Kadyrzhanova (UNFCCC secretariat).

B. Summary

4. The ERT conducted a technical review of the information reported in the BR3 of the Netherlands in accordance with the UNFCCC reporting guidelines on BRs (annex I to decision 2/CP.17).

1. Timeliness

5. The BR3 was submitted on 29 December 2017, before the deadline of 1 January 2018 mandated by decision 2/CP.17. The CTF tables were also submitted on 29 December 2017. The Netherlands resubmitted its CTF tables on 14 February and 7 March 2018.

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

6. Issues and gaps identified by the ERT related to the reported information are presented in table 1. The information reported by the Netherlands in its BR3 mostly adheres to the UNFCCC reporting guidelines on BRs.

Table 1
Summary of completeness and transparency of mandatory information reported by the Netherlands in its third biennial report

Section of BR	*Completeness*	*Transparency*	*Reference to description of recommendations*
GHG emissions and trends	Complete	Transparent	
Assumptions, conditions and methodologies related to the attainment of the quantified economy-wide emission reduction target	Complete	Transparent	
Progress in achievement of targets	Mostly complete	Mostly transparent	Issues 1 and 2 in table 6 and issue 2 in table 10
Provision of support to developing country Parties	Mostly complete	Mostly transparent	Issue 1 in table 12, issue 1 in table 15 and issue 1 in table 16

Note: A list of recommendations pertaining to the completeness and transparency issues identified in this table is included in chapter III below.

[1] The BR submission comprises the text of the report and the CTF tables, which are both subject to the technical review.

II. Technical review of the information reported in the third biennial report

A. Information on greenhouse gas emissions and removals related to the quantified economy-wide emission reduction target

1. Technical assessment of the reported information

7. Total GHG emissions[2] excluding emissions and removals from LULUCF decreased by 11.6 per cent between 1990 and 2015, whereas total GHG emissions including net emissions or removals from LULUCF decreased by 11.0 per cent over the same period. According to the 2018 GHG inventory submission presented by the Netherlands during the review, total GHG emissions excluding LULUCF in 2016 had increased by around 1.0 per cent compared with 2015. Table 2 illustrates the emission trends by sector and by gas for the Netherlands.

Table 2
Greenhouse gas emissions by sector and by gas for the Netherlands for the period 1990–2015

	GHG emissions (kt CO_2 eq)					*Change (%)*		*Share (%)*	
	1990	*2000*	*2010*	*2014*	*2015*	*1990–2015*	*2014–2015*	*1990*	*2015*
Sector									
1. Energy	156 404.87	165 903.27	178 772.85	154 177.49	160 967.83	2.9	4.4	70.9	82.5
A1. Energy industries	53 075.52	64 323.06	66 677.83	63 977.07	68 357.61	28.8	6.8	24.0	35.0
A2. Manufacturing industries and construction	32 123.55	26 879.82	27 161.72	24 313.32	24 129.87	–24.9	–0.8	14.6	12.4
A3. Transport	28 139.98	33 076.25	35 381.65	30 677.90	31 159.83	10.7	1.6	12.7	16.0
A4. and A5. Other	39 945.42	39 999.34	46 683.99	32 844.85	34 545.06	–13.5	5.2	18.1	17.7
B. Fugitive emissions from fuels	3 120.40	1 624.80	2 867.67	2 364.35	2 775.46	–11.1	17.4	1.4	1.4
C. CO_2 transport and storage	NO	NO	NO	NO	NO	NA	NA	NA	NA
2. IPPU	24 850.90	22 409.51	12 145.26	11 000.55	11 482.49	–53.8	4.4	11.3	5.9
3. Agriculture	25 314.77	21 243.78	18 495.31	18 616.70	19 210.26	–24.1	3.2	11.5	9.8
4. LULUCF	6 060.44	6 044.51	6 135.20	6 674.89	6 710.87	10.7	0.5	NA	NA
5. Waste	14 180.20	9 821.84	4 508.20	3 578.04	3 378.06	–76.2	–5.6	6.4	1.7
6. Other	NO	NO	NO	NO	NO	NA	NA	NA	NA
Indirect CO_2	665.96	335.77	236.55	209.62	207.04	–68.9	–1.2	NA	NA
Gas									
CO_2	162 271.29	171 650.16	182 545.60	158 043.01	165 127.23	1.8	4.5	73.5	84.7
CH_4	32 316.45	25 090.46	20 116.21	18 784.43	19 000.75	–41.2	1.2	14.6	9.7
N_2O	17 687.11	15 711.14	8 125.93	8 065.33	8 331.87	–52.9	3.3	8.0	4.3
HFCs	5 606.33	4 765.06	2 666.32	2 252.21	2 335.72	–58.3	3.7	2.5	1.2
PFCs	2 662.85	1 902.81	313.77	93.21	104.22	–96.1	11.8	1.2	0.1
SF_6	206.70	258.78	153.79	134.59	138.83	–32.8	3.2	0.1	0.1
NF_3	NO, IE	NO, IE	NO, IE	NO, IE	NO, IE	NA	NA	NA	NA
Total GHG emissions without LULUCF	**220 750.73**	**219 378.41**	**213 921.63**	**187 372.78**	**195 038.63**	**–11.6**	**4.1**	**100.0**	**100.0**

[2] In this report, the term "total GHG emissions" refers to the aggregated national GHG emissions expressed in terms of CO_2 eq excluding LULUCF, unless otherwise specified. Values in this paragraph are calculated based on the 2017 annual submission, version 5.

	GHG emissions (kt CO_2 eq)					*Change (%)*		*Share (%)*	
	1990	*2000*	*2010*	*2014*	*2015*	*1990–2015*	*2014–2015*	*1990*	*2015*
Total GHG emissions with LULUCF	**226 811.17**	**225 422.92**	**220 056.82**	**194 047.67**	**201 749.50**	**–11.0**	**4.0**	**NA**	**NA**
Total GHG emissions without LULUCF, including indirect CO_2	**221 416.70**	**219 714.18**	**214 158.17**	**187 582.41**	**195 245.67**	**–11.8**	**4.1**	**NA**	**NA**
Total GHG emissions with LULUCF, including indirect CO_2	**227 477.14**	**225 758.69**	**220 293.37**	**194 257.30**	**201 956.54**	**–11.2**	**4.0**	**NA**	**NA**

Source: GHG emission data: the Netherlands' 2017 annual submission, version 5.

8. The decrease in total GHG emissions was due mainly to the decrease in emissions from the IPPU, agriculture and waste sectors, driven by the decrease in CH_4, N_2O and F-gases (by 41.2, 52.9 and 69.6 per cent, respectively), and the notable decrease in emissions from energy use in non-energy industries (by 24.9 per cent).

9. The summary information provided on GHG emissions was consistent with the information reported in the 2017 annual submission.

10. In brief, the Netherlands' national inventory arrangements were established in accordance with the Act on Inventory of Greenhouse Gases dated 12 December 2005. Since 2017 the Ministry of Economic Affairs and Climate Policy has been bearing overall responsibility for climate change policy issues, including the preparation of the national GHG inventory. In December 2005, the Netherlands Enterprise Agency was designated by law as the national inventory entity, the single national entity required under the Kyoto Protocol. In addition to the coordination of the establishment and maintenance of a national system, the tasks of the Netherlands Enterprise Agency include overall coordination of improved quality assurance/quality control activities as part of the national system, and coordination of support for and the response to the UNFCCC review process.

11. The National Institute for Public Health and the Environment was assigned by the Ministry of Economic Affairs and Climate Policy and the Ministry of Infrastructure and Water Management as the institute responsible for coordinating the compilation and maintenance of the pollutants emission register and inventory system, which contains data on approximately 350 pollutants, including GHGs. The pollutants emission register and inventory system is being used as the basis for the national inventory report and for the completion of the common reporting format tables. In 2015 the Netherlands replaced 40 monitoring protocols, containing the methodological descriptions as part of the national system, by five methodology reports (see chapter II.A.3 below).

2. Assessment of adherence to the reporting guidelines

12. The ERT assessed the information reported in the BR3 of the Netherlands and identified an issue relating to transparency and adherence to the UNFCCC reporting guidelines on BRs. The finding is described in table 3.

Table 3
Findings on greenhouse gas emissions and trends from the review of the third biennial report of the Netherlands

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
1	Reporting requirement specified in paragraph 2 Issue type: transparency Assessment: encouragement	According to the UNFCCC reporting guidelines on BRs, emission trends should be calculated on the basis of emissions reported under the Convention, which means reporting total GHG emissions excluding LULUCF and including indirect CO_2 emissions. Instead of the base year under the Convention, the BR3 presented the base year under the Kyoto Protocol, which includes emissions of F-gases taken for 1995 instead of 1990. Also, total GHG emissions in 2015 did not include indirect emissions. These calculations are inconsistent with total GHG emissions for the base year. During the review, this issue was raised with the Party. The Party agreed that the use of the same methodology for the base year is required for better comparability of BRs across all Parties included in Annex I to the Convention. To improve transparency, the ERT encourages the Netherlands to use the base-year emissions under the Convention (i.e. total GHG emissions excluding LULUCF and including indirect emissions) and apply the same approach for each year included in the emission trends in its next BR.

Note: Paragraph number 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, transparent and adhering to the UNFCCC reporting guidelines on BRs.

B. Assumptions, conditions and methodologies related to attainment of the quantified economy-wide emission reduction target

1. Technical assessment of the reported information

13. For the Netherlands the Convention entered into force on 21 March 1994. Under the Convention the Netherlands 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. The EU offered to move to a 30 per cent reduction target on the condition that other developed countries commit to a comparable target and developing countries contribute according to their responsibilities and respective capabilities under a new global climate change agreement.

14. 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 CO_2, CH_4, N_2O, HFCs, PFCs and SF_6 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. The EU generally allows its member States to use units from the Kyoto Protocol mechanisms as well as new market mechanisms for compliance purposes, subject to a number of restrictions in terms of origin and type of project and up to an established limit. Companies can make use of such units to fulfil their requirements under the EU ETS.

15. The EU 2020 climate and energy package includes the EU ETS and the ESD (see chapter II.C.1 below). The EU ETS covers mainly point emissions sources in the energy, industry and aviation sectors. An EU-wide emissions cap has been put in place for the period 2013–2020 with the goal of reducing emissions by 21 per cent below the 2005 level by 2020. Emissions from non-ETS sectors are regulated through member State specific targets that add up to a reduction at the EU level of 10 per cent below the 2005 level by 2020.

16. Under the ESD, the Netherlands has a target of reducing its total emissions to 16 per cent below the 2005 level by 2020 for non-ETS sectors. National emission targets for non-ETS sectors for 2020 have been translated into binding quantified AEAs for the period 2013–2020. The AEAs for the Netherlands for 2017–2020 were modified using the GWP values from the AR4 and the change of the scope of emissions falling under the ESD. The AEAs of

the Netherlands change following a linear path from 122,948.13 kt CO_2 eq in 2013 to 107,362.87 kt CO_2 eq in 2020.[3]

17. According to the information reported in its BR3, the Netherlands is projected to reduce its GHG emissions by a greater amount than what is required under the ESD. More specifically, it was reported by the Netherlands during the review that it expects to reduce emissions under the ESD to 95,138.43 kt CO_2 eq by 2020 (see para. 89 below). The Government of the Netherlands decided that any surplus AEAs for the period 2013–2020 will be cancelled and will not be carried over beyond 2020.

18. In 2011 the Government of the Netherlands translated the target for non-ETS sectors for 2020 into sectoral goals for the CO_2 emission level in the energy, industry, transport, built environment and agriculture sectors, and for the non-CO_2 emission level in the agriculture and other sectors. The Netherlands provided information on the ministries responsible for the achievement of the sectoral goals. Each sectoral goal has an expected emission level to be achieved by 2020. The total emission level to be achieved by 2020 as a result of the implementation of the sectoral goals is 99.25 Mt CO_2 eq, calculated using the GWP values from the IPCC Second Assessment Report.

19. In 2015 the Government of the Netherlands became subject to a court decision in a case filed by a non-Party actor (the non-governmental organization, Urgenta) regarding the overall national emission reduction target by 2020. The court ruled that, by 2020, the Government of the Netherlands should reduce national GHG emissions by 25 per cent compared with the 1990 level. Although the Government has appealed against the decision, it is obliged to start executing it.

20. During the review, the Netherlands provided additional information on the emission trends of the installations under the EU ETS, with annual cumulative values showing the increasing emission trends until 2015 and a stagnation of emission levels in 2015–2016.

21. During the review, the Netherlands also provided information about a recently agreed emission reduction target of the EU of an at least 40 per cent emission reduction by 2030 compared with the 1990 level. The target is split into two components: a 43 per cent emission reduction under the EU ETS and a 30 per cent emission reduction for non-ETS sectors. Under the EU target for 2030, the Netherlands' contribution will be a 36 per cent emission reduction compared with the 2005 level. The Netherlands, together with a few other EU member States, has proposed that the EU take on a more ambitious target of a 55 per cent emission reduction by 2030.

22. In anticipation of the EU negotiations on the more ambitious target, in 2017 the Government of the Netherlands decided to adopt a 49 per cent national emission reduction target by 2030 compared with the 1990 level, covering emissions under both the EU ETS and the ESD.

2. Assessment of adherence to the reporting guidelines

23. The ERT assessed the information reported in the BR3 of the Netherlands and recognized that the reporting is complete, transparent and adhering to 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.

C. Progress made towards the achievement of the quantified economy-wide emission reduction target

1. Mitigation actions and their effects

(a) Technical assessment of the reported information

24. The Netherlands provided information on its package of PaMs implemented, adopted and planned, by sector and by gas, in order to fulfil its commitments under the Convention.

[3] European Commission decision 2017/1471 of 10 August 2017 amending decision 2013/162/EU of 26 March 2013 to revise member States' AEAs for the period from 2017 to 2020.

The Party reported on its policy context and legal and institutional arrangements put in place to implement its commitments and monitor and evaluate the effectiveness of its PaMs.

25. The Netherlands provided information on a set of PaMs similar to those previously reported. It also provided information on changes made since the previous submission to its institutional, legal, administrative and procedural arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of the progress made towards its target. During the review, the Netherlands provided a detailed update on these arrangements.

26. The overall responsibility for climate change policymaking lies with the Ministry of Economic Affairs and Climate Policy. The Party informed the ERT that the institutional cooperation framework on climate policy implementation led by the Ministry of Economic Affairs and Climate Policy changed in 2017, but the change does not influence the functions provided by the cooperating institutions.

27. The main cross-sectoral and overarching policy framework in the Netherlands is the Agreement on Energy for Sustainable Growth (2013). Its horizontal focus encompasses measures on both the supply and the demand side of the energy sector. The framework provides consistency and stability of the energy policy supported by a wide social alliance and active stakeholder involvement. The main aims of the policy framework are to reduce final energy consumption by 1.5 per cent annually (resulting in energy savings of 100 PJ) and to increase the share of renewable energy in energy consumption to 14 per cent by 2020 and 16 per cent by 2023. The framework also aims to create 15,000 additional full-time jobs annually.

28. Some PaMs are devolved to the local level. The structure of the Agreement on Energy for Sustainable Growth, which provides an overarching framework for PaMs, includes local-level actors in the development and implementation of PaMs. For example, the Green Deal programme works most actively in the field of energy and climate, and aims to provide support for civil society organizations, companies and local authorities that implement activities within the domain of the programme and non-financial support for overcoming barriers. The local climate agenda process is a joint initiative for the cooperation of local authorities, provinces and water authorities in order to exchange best practices, address legislative obstacles and implement facilitating initiatives, such as regional climate agreements.

29. The Netherlands reported on its self-assessment of compliance with emission reduction targets and national rules for taking action against non-compliance. The Netherlands, as an EU member State, is subject to the EU climate policy, including the monitoring mechanism regulation, which provides the basis for self-assessment. The Environmental Management Act provides the legal basis for most environmental regulations that affect the emission of GHGs, including enforcement provisions. The 2015 Housing Act and the Building Decree provide energy performance requirements for new buildings.

30. 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 CO_2 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.

31. In operation since 2005, the EU ETS is a cap-and-trade system that covers all significant energy-intensive installations (mainly large point emissions sources such as power plants and industrial facilities) that produce 40–45 per cent of the GHG emissions of the EU. It is expected that the EU ETS will guarantee that the 2020 target (a 21 per cent emission reduction below the 2005 level) will be achieved for sectors under the scheme. The third phase of the EU ETS started in 2013 and the system now includes aircraft operations (since 2012) as well as N_2O emissions from chemical industries, PFC emissions from aluminium production and CO_2 emissions from industrial processes (since 2013). The 2030 target for the EU ETS is a 43 per cent reduction compared with the 2005 level (see para. 21 above).

32. The ESD became operational in 2013 and covers sectors outside the EU ETS, including transport (excluding domestic and international aviation, and international maritime transport), residential and commercial buildings, agriculture and waste, together accounting for 55–60 per cent of the GHG emissions of the EU. The aim of the ESD is to decrease GHG emissions in the EU by 10 per cent below the 2005 level by 2020 and it includes binding annual targets for each member State for 2013–2020. The 2030 target for non-ETS sectors is a 30 per cent emission reduction compared with the 2005 level (see para. 21 above).

33. The Netherlands highlighted the EU-wide mitigation actions and targets by 2030, which are under development, for emission reduction, renewable energy and energy efficiency along with the governance for climate and energy action, including integrated reporting. The implementation of these targets is critical for the Netherlands' contribution to the attainment of the EU-wide 2030 emission reduction target of 40 per cent compared with that 1990 level.

34. The Netherlands introduced national policies to achieve its targets under the ESD and domestic emission reduction targets. The key policies reported are the subsidy scheme for renewable energy production, SDE+; the actions under the Agreement on Energy for Sustainable Growth; and the group of PaMs targeting transport and the built environment. Of these policies, the mitigation effect of the SDE+ subsidy scheme is the most significant (see table 4). Other policies that have delivered significant emission reductions are the group of building energy efficiency and transport policies.

35. The Netherlands highlighted the domestic mitigation actions that are under development, for implementing the commitments included in the 2017 coalition agreement reached by the new Government that came to power in November 2017. Among the mitigation actions that provide a foundation for significant additional emission reductions, the following are critical for the Netherlands' to attain its 2030 emission reduction target: carbon capture and storage; the closing of all coal power stations by 2030; installation of additional offshore wind farms; the increase of industrial process efficiency; and optimizing the energy use of public buildings. Table 4 provides a summary of the reported information on the PaMs of the Netherlands.

Table 4
Summary of information on policies and measures reported by the Netherlands

Sector	*Key PaMs*	*Estimate of mitigation impact by 2020 (kt CO_2 eq)*
Policy framework and cross-sectoral measures	Actions other than those related to renewable energy sources under the 2013 Agreement on Energy for Sustainable Growth	8 700
	EU ETS	NA
Energy		
Transport	Group of PaMs: fiscal policy on car efficiency, green deals, and fuel tax	10 800
Renewable energy	SDE+ subsidy scheme for renewable energy production	45 700
	Biofuels for transport	9 000
	Net metering for renewable energy production	6 000
Energy efficiency	Eco-design directive	7 000
	PaMs in the built environment	17 000
IPPU	Group of PaMs	4 100
Agriculture	Group of PaMs	1 600
Waste	Legislation on landfill and waste	4 600

Note: The estimates of mitigation impact are estimates of emissions of CO_2 or CO_2 eq avoided in a given year as a result of the implementation of mitigation actions, unless otherwise specified.

36. The Netherlands provided information during the review regarding the estimation of mitigation impacts of PaMs. The Party conducts a bottom-up ex post policy impact assessment for some of the PaMs, mostly regarding energy savings. An example was provided during the review of the performance of the SDE+ scheme between 2015 and 2017. The methodology used for the quantification of the mitigation impact of PaMs is based on the projection of a longer policy implementation.

37. The Netherlands provided data on mitigation impacts for 2020 and cumulatively for the period 2013–2020. Data collection, institutional cooperation and the methodology used for the ex post assessment of PaMs were not described. The quantified mitigation impacts of individual PaMs or groups of PaMs were not provided either for the previous period or for individual years (except for 2020). The information provided on the quantified mitigation impact or ex post assessment of PaMs is limited to the assessment of PaMs with regard to their potential impact in the 2013–2020 period only.

(b) Policies and measures in the energy sector

38. **Energy supply**. The sectoral emission reduction goal for the industry and energy sectors is 10.7 Mt CO_2 eq for 2020. In the energy sector, the main policy is the EU ETS, which covers 79 electricity-generating installations, with 54 per cent of emissions covered by the EU ETS in the Netherlands (equal in 2016 to 93.88 Mt CO_2 eq). The installations in the electricity sector do not receive free allocations under the EU ETS. The Netherlands intends to introduce a minimum carbon floor price for the ETS installations, which will provide a more balanced and certain taxation of carbon. It has also been decided that the Netherlands will phase out coal-based electricity production by 2030: it has already closed down five coal-based power plants.

39. The energy tax is an important factor in determining energy prices and has been in use in the Netherlands since 1996. Concerns over natural gas extraction and triggered seismic activity around the natural gas fields accelerated the energy transition away from natural gas use, stimulated by the tariff for natural gas, which has increased by 32 per cent since 2016, while the tariff for electricity has decreased by 16 per cent. Smart metering for electricity and gas has been rolled out on a large scale, aiming for 80 per cent penetration by 2020 for households and small businesses.

40. **Renewable energy sources**. The target of the Netherlands is to increase the share of renewable energy to 14 per cent by 2020 in accordance with EU targets. The largest emission reductions are foreseen in this sector, projected to amount to 60.5 Mt CO_2 eq in the period 2013–2020.

41. The most significant policy on renewable energy is the SDE+ scheme, which is a support scheme for large-scale production of all types of renewable energy (except for transport fuels, where the funds are granted via auctions and a sliding feed-in premium system). Within the scheme, there is a dedicated support window for offshore wind farms with the capacity of 700 MW each, for which five tenders will be organized by 2020. The onshore wind capacity is projected to reach 6,000 MW by 2020, while the offshore wind capacity will be close to 5,000 MW completed and in the construction phase.

42. The investment grant facility is available for small renewable heating systems. Net metering is also provided to accelerate the deployment of small-scale solar photovoltaics. Together, these are expected to produce 6,000 kt CO_2 eq cumulative emission reductions by 2020.

43. **Energy efficiency**. The building and industry sectors are the focus of the energy efficiency policies. The EU energy efficiency targets aim to raise energy efficiency by 20 per cent by 2020 and by 27 per cent by 2030. To achieve these targets, a linear trajectory of 1.5 per cent annual energy saving has been developed. In the building sector, the European energy performance of buildings directive requires new buildings to be almost energy neutral by 2020, with government buildings adhering to this target already in 2018.

44. The Agreement on Energy for Sustainable Growth serves as the framework policy for the improvement of energy efficiency in existing buildings and foresees energy efficiency improvements in about 300,000 buildings every year out of the total of 7.4 million residential buildings. Mandatory energy labelling for buildings has been already implemented and the

National Energy Savings Revolving Fund, with a budget of EUR 300 million, provides higher mortgages for investments in energy saving measures.

45. For the social housing sector, the Agreement on Energy for Sustainable Growth foresees 24 PJ energy savings by 2020. This effort is supported by the STEP subsidy scheme, with a budget of EUR 395 million for the 2014–2018 period. The EU directive on eco-design (directive 2009/125/EC) introduces mandatory energy efficiency standards for appliances, which could lead to 7,000 kt CO_2 eq emission savings by 2020.

46. The Agreement on Energy for Sustainable Growth contains PaMs aimed at industrial energy efficiency (in the form of the long-term agreements on energy efficiency) and the voluntary agreements backed up by environmental permits on the basis of the Environmental Management Act. The long-term agreements cover 80 per cent of industrial energy consumption in the Netherlands. The Party informed the ERT during the review that additional PaMs are foreseen in 2018 aimed at introducing an obligation to inform a competent authority of energy efficiency measures taken and the standardization of payback time calculations for energy efficiency measures.

47. **Transport sector**. The most significant policies in transport are the EU common and coordinated policies and measures transposed by the Netherlands, including the implementation of the EU directive on renewable energy (directive 2009/28/EC), which states that the Netherlands should ensure that a minimum share of 10 per cent of all energy consumption in transport comes from renewable sources; and the EU CO_2 emission standard for cars. The transition to a sustainable fuel mix includes the increase to 10 per cent of sustainable biofuels use, with a current blending ratio of 7 per cent in 2020; and support for innovation and the use of more advanced biofuels. This measure is expected to bring 9,000 kt CO_2 eq cumulative emission reductions by 2020.

48. The Agreement on Energy for Sustainable Growth aims to achieve a 17 per cent reduction of CO_2 emissions from the transport sector by 2030, and a 60 per cent reduction of CO_2 emissions by 2050, both compared with the 1990 level (see para. 27 above). The ERT was informed by the Netherlands that it intends to allow only zero-emission new cars to enter the market from 2025, compared with the previous date set for this measure (2035). The Netherlands also informed the ERT during the review that in the new 2017 Climate and Energy Agenda the mitigation ambition levels have been increased to 80–95 per cent CO_2 emission reductions by 2050 for the sector.

49. Other measures, including the fiscal policy on car efficiency, green deals and fuel tax, are projected to bring 10,800 kt CO_2 eq emission reductions by 2020. The Netherlands informed the ERT during the review that it is likely that additional policies will be needed to achieve the increased ambition levels defined in 2017; however, such policies have not yet been developed.

50. The submission includes information on how 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. For aviation, the Netherlands is to apply all four pillars of the ‘four-pillar strategy’ for sustainable aviation, comprising innovative technology, air traffic management measures, market-based measures and the use of sustainable biofuels. For maritime transportation, the Netherlands is monitoring a voluntary agreement with ship owners, ship operators and the logistics sector concerning the reduction of emissions.

(c) Policies and measures in other sectors

51. **Industrial processes**. The reduction of non-CO_2 gases in the industrial sector was addressed by the reduction programme for non-CO_2 gases.

52. **Agriculture**. The agriculture sector is an important sector of the economy in the Netherlands and also in terms of its emission profile, accounting for 9.8 per cent of the total GHG emissions in 2015. It was reported that 50,000 farms with 1.6 million dairy cattle are responsible for emissions of approximately 18 Mt CO_2 eq and that some 3,000 horticultural companies account for about 6 Mt CO_2 eq. The main policy framework for the sector is the Agro Covenant, established in 2008 with the aim to reduce CO_2 emissions to 3.5–4.5 Mt CO_2 eq in 2020 and non-CO_2 emissions to 4–6 Mt CO_2 eq. The PaMs are mostly aligned with the

industrial energy efficiency measures such as the long-term agreements for horticulture. For non-CO_2 gases, the main PaMs are reducing the manure-based biogas production; improved stable conditions; and limiting the phosphate load generated by the sector.

53. **LULUCF**. The forestry sector in the Netherlands does not play a significant part in the emission profile and the main sources of emissions in the sector are grasslands on peatland, croplands and soils in the built environment. Since 2005 the sector has been a net sink, owing to the growth of existing forests and the creation of new forests. The forestry policy is integrated into the nature policy and no specific mitigation PaMs were designed. Emissions from grasslands are influenced by the provincial regulations on the maximum limits of water levels. The Netherlands informed the ERT during the review that, in 2017, in line with the increased ambition of the EU 2030 targets, a 1.5 Mt CO_2 eq emission reduction was agreed as the target for the LULUCF sector.

54. **Waste management**. Emissions from the waste sector decreased by 76.2 per cent between 1990 and 2015 and the major source of emissions from the waste sector are landfill sites. To reduce these emissions, waste management plans are prepared for six-year periods under the Environmental Management Act. In the Netherlands, only a minimal amount of waste (2 per cent) is sent to landfill. The current waste policy aims to minimize the production of waste, to maximize recycling and recovery and to reduce the incineration of waste by 50 per cent by 2025.

(d) Response measures

55. The Netherlands reported on the assessment of the economic and social consequences of its response measures, and presented several initiatives aimed at minimizing the adverse impacts of measures on the country itself and on developing countries. The Netherlands provides support for climate action as part of development cooperation, focusing mainly on improving access to renewable energy and on halting deforestation; supporting adaptation, climate-smart agriculture and integrated water resource management; and providing climate-resilient water and sanitation services.

56. The Netherlands is committed to scaling up its support for mitigation and adaptation activities in developing countries, and has continued to realize a year-on-year increase in its climate finance. In 2016, mobilized private finance amounted to EUR 186.1 million (see para. 115 below). To address the needs of the poorest countries, it works with a multitude of actors, including national, regional and local authorities, multilateral organizations, non-governmental organizations, private sector organizations, farmers' organizations, water authorities, and so on.

57. The Netherlands helps countries to make use of the benefits and advantages of the carbon market by promoting collective innovation and piloting of market-based instruments for GHG emission reduction. In addition, it strives to minimize the adverse impacts of using biofuels. All biofuels on the market in Europe and the Netherlands must comply with the sustainability criteria laid down in the EU directive on renewable energy (directive 2009/28/EC). Only sustainable biofuels are allowed to be used for fulfilling the blending target.

(e) Assessment of adherence to the reporting guidelines

58. The ERT assessed the information reported in the BR3 of the Netherlands and recognized that the reporting is complete, transparent and adhering to 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.

2. Estimates of emission reductions and removals and the use of units from market-based mechanisms and land use, land-use change and forestry

(a) Technical assessment of the reported information

59. The Netherlands reported in CTF table 4 GHG emissions for non-ETS sectors, instead of total GHG emissions for the base year and 2013–2015. Further, CTF tables 4(a)I and 4(a)II were not filled in.

60. For 2014, the Netherlands reported in CTF table 1 annual total GHG emissions excluding LULUCF of 187,372.78 kt CO_2 eq, which is 15.1 per cent below the 1990 level. For 2015, the Netherlands reported in CTF table 1 annual total GHG emissions excluding LULUCF of 195,038.63 kt CO_2 eq, which is 11.6 per cent below the 1990 level.

61. Regarding emissions from non-ETS sectors relating to the target under the ESD, the Netherlands reported that those emissions reached 97,887.34 kt CO_2 eq in 2014. In 2015, emissions from non-ETS sectors amounted to 101,119.72 kt CO_2 eq. This amount is 14.6 per cent (17,284 kt CO_2 eq) below the AEA assigned for 2015.

62. The Netherlands reported that it does not intend to use units from market-based mechanisms under the Kyoto Protocol for the second commitment period. It reported in CTF tables 4 and 4(b) that it did not use units from market-based mechanisms in 2014 and 2015.

63. On its use of units from LULUCF activities, the Netherlands reported in CTF tables 4 and 4(a) that in 2014 and 2015 it did not use units to offset any of its total GHG emissions. Table 5 illustrates the Netherlands' total GHG emissions, the contribution of LULUCF and the use of units from market-based mechanisms to achieve its target.

Table 5
Summary of information on the use of units from market-based mechanisms and land use, land-use change and forestry by the Netherlands to achieve its target

Year	*Emissions excluding LULUCF (kt CO_2 eq)*	*Contribution of LULUCF (kt CO_2 eq)*[a]	*Emissions including contribution of LULUCF (kt CO_2 eq)*	*Use of units from market-based mechanisms (kt CO_2 eq*
1990	220 750.73			
2010	213 921.63			
2011	200 030.03			
2012	195 215.55			
2013	195 406.58	NA	NA	NA
2014	187 372.78	NA	NA	NA
2015	195 038.63	NA	NA	NA

Sources: The Netherlands's BR3 and CTF table 1.

[a] The EU's unconditional commitment to reduce GHG emissions by 20 per cent below the 1990 level by 2020 does not include emissions/removals from LULUCF.

64. In assessing the progress towards the achievement of the 2020 target, the ERT noted that the Netherlands' emission reduction target for non-ETS sectors is 16 per cent below the 2005 level. The progress in achieving this target is based on an assessment of progress in achieving AEAs according to the ESD.

65. The ERT noted that the Netherlands is making progress towards its emission reduction target by implementing mitigation actions that are delivering sufficient emission reductions to comply with and stay below the annual AEAs for each year of the period remaining until 2020. The Netherlands is likely to achieve its 2020 target for non-ETS sectors if its emission level remains stable for the remaining years until 2020. On the basis of the results of the projections (see para. 89 below), the ERT also noted that the Party is making progress towards achieving its target under the Convention.

(b) Assessment of adherence to the reporting guidelines

66. The ERT assessed the information reported in the BR3 of the Netherlands and identified issues relating to completeness, transparency and adherence to the UNFCCC reporting guidelines on BRs. The findings are described in table 6.

Table 6
Findings on estimates of emission reductions and removals and the use of units from the market-based mechanisms and land use, land-use change and forestry from the review of the third biennial report of the Netherlands

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation*
1	Reporting requirement specified in paragraph 9 Issue type: completeness Assessment: recommendation	CTF table 4 did not include mandatory information on total GHG emissions excluding LULUCF for the base year. The ERT recommends that the Netherlands improve the completeness of its reporting by including total GHG emissions excluding LULUCF for the base year in CTF table 4 in its next BR.
2	Reporting requirement specified in paragraph 5 Issue type: transparency Assessment: recommendation	The Netherlands reported information for 2013–2015 in CTF table 4 only for GHG emissions under the ESD. The same issue was raised in the previous review report. During the review, the Netherlands clarified that its reporting is in line with the UNFCCC reporting guidelines on BRs because the Party committed to jointly fulfil the EU economy-wide emission reduction target under the Convention; while under the ESD, the target for the Netherlands only covers non-ETS emissions for the period 2013–2020. The ERT noted the Party's clarification. The ERT also noted that reporting on progress should be included in relation to the economy-wide target. The ERT recommends that the Netherlands clarify the description of the economy-wide emission reduction target in its next submission. It could be included in the next BR and CTF table 2(f) that the Netherlands is committed to jointly fulfil the EU economy-wide emission reduction target under the Convention, and that, under the ESD, the target for the Netherlands only covers non-ETS emissions for the period 2013–2020.

Note: Paragraph number 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, transparent and adhering to the UNFCCC reporting guidelines on BRs.

3. Projections overview, methodology and results

(a) Technical assessment of the reported information

67. The Netherlands reported updated projections for 2020 and 2030 relative to actual inventory data for 2015 or, where possible, 2016 under the WEM scenario. The WEM scenario reported by the Netherlands includes implemented and adopted PaMs as at 1 May 2017.

68. In addition to the WEM scenario, the Netherlands reported the WAM scenario. The WAM scenario includes planned PaMs that were not officially implemented by 1 May 2017. The Netherlands provided a definition of its scenarios, explaining that its WEM scenario includes policies currently implemented and adopted as at 1 May 2017. It includes measures that are sufficiently concrete and have been made binding, such as the EU ETS, SDE+, the abolition of the milk quota, and concrete and binding measures of the Agreement on Energy for Sustainable Growth.

69. The WOM scenario is not included in the projections because climate and energy policies have already been implemented in the Netherlands since the early 1990s. Since then, policies have been elaborated (such as subsidy schemes for sustainable energy production and energy efficiency policies), discontinued (such as the Benchmarking Covenant) or newly created, both nationally (such as the Agreement on Energy for Sustainable Growth) or as a result of European policies (such as the EU ETS and the EU directive on eco-design) and their revisions.

70. Many policies are cross-sectoral, but each sector also has its specific policies. This situation has resulted in a complex framework of PaMs, making the construction of a WOM

scenario (for instance, no new policies after 2000) very difficult. The definitions indicate that the scenarios were prepared according to the UNFCCC reporting guidelines on NCs.

71. The Netherlands used the 1990–2015 GHG inventory data as a basis for calculating projections for 2020 and 2030 under the WEM and WAM scenarios. The ERT noted that the projections calculated for each of the two scenarios were based on the Netherlands' total GHG emissions including emissions from the LULUCF sector, which is not in line with the UNFCCC reporting guidelines on NCs. During the review, the Netherlands resubmitted the CTF tables with the necessary corrections; however, the projected values included in the BR3 remain unchanged (see issue 2 in table 10).

72. 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 CO_2, CH_4, N_2O, PFCs, HFCs and SF_6 (treating PFCs and HFCs collectively in each case) as well as NF_3 for 2016–2030 (for 2016 provisional inventory data were presented). The projections are also provided in an aggregated format for each sector as well as for a Party total using GWP values from the AR4.

73. The Netherlands reported emission projections for indirect GHGs, such as nitrogen oxides, non-methane volatile organic compounds and sulfur oxides. However, projections for emissions of indirect GHGs were not included in the CTF tables.

74. Emission projections related to fuel sold to ships and aircraft engaged in international transport were reported separately and not included in the totals. The Netherlands reported on factors and activities affecting emissions for each sector.

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

75. The data on GHG emissions that formed the background for the projections in the BR3 were collected and processed using the 2006 IPCC Guidelines, while the NC6 projections were based on estimates obtained using the *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories*. The base year for most modelling parameters is 2015 or, where possible, 2016.

76. The projections described in the BR3 are based on the NEV 2017, which describes the most plausible developments based on available information about prices, markets, technology and policies. The NEV 2017 also projects emission levels up to 2035 (instead of 2030). For the NC6, the reference projections made in 2010 for the NC5 and updated in 2012 (Geactualiseerde Referentieraming 2012) were used as a basis for the projections, while for the BR2 the National Energy Outlook 2015 (an earlier version of the NEV 2017) was used.

77. Unlike for the NC6, the scenarios used for the BR3 take into account the PaMs of the Agreement on Energy for Sustainable Growth regarding energy policies up to the 2020–2023 period and the implementation of the 2006 IPCC Guidelines (e.g. GWP values from the AR4). The NEV 2017 incorporated new insights into economic and demographic developments, sectoral developments, fossil fuel prices, CO_2 prices and policies. Advances in exogenous modelling assumptions were taken into account up to May 2017, using official national statistics, mainly from Statistics Netherlands and the Pollutant Release and Transfer Register, where available.

78. The Netherlands provided a detailed description of the model used for projecting emissions from the energy sector and transport; however, for other sectors (IPPU, agriculture, waste and LULUCF) the approach to modelling and the key features of the relevant models were not described in the BR3. During the review, the Party provided detailed explanations of the modelling approaches used for each sector, including gas coverage, purpose and key assumptions, as well as the strengths and weaknesses of the models used for each sector.

79. The energy needs for the IPPU, agriculture and waste sectors were projected using the SAVE model, which is a simulation model for the services sector. On the basis of the economic growth per subsector and the measures taken, SAVE calculates the future gas and electricity demand. In order to calculate projected emissions from agriculture, the Party used projections for livestock numbers based on historical inventory data that were developed for economic research purposes, and those data were used as input to the NEMA model, which

takes into account, among other parameters, rates of digestion, proportion of time spent indoors and outside, and composition of fodder that may be affected by the policy decisions.

80. Emission projections for the LULUCF sector were made using a simple spreadsheet model that uses spatial developments based on expert judgment and the spatial analysis for the 2050 scenarios. Emissions from solid waste disposal were modelled explicitly by Rijkswaterstaat (the national water agency). The main concept of the model is based on the organic matter decay calculation approach from the 2006 IPCC Guidelines, using a combination of default and country-specific parameters (see issue 3 in table 10).

81. To prepare its GHG emission projections, the Netherlands relied on the key underlying assumptions associated with the following variables: GDP growth; population and population growth; number of households; floor space in utility buildings and inhabited dwellings; international fuel prices (oil, gas and coal); mileage travelled by passengers and tonnage per distance index for freight transportation; and livestock statistics for the agriculture sector. These variables and the assumptions regarding their values were reported in CTF table 5. The information describing the underlying assumptions was not included in CTF table 5 or the BR3.

82. During the review, the Netherlands explained that the assumptions were updated on the basis of the most recent economic developments known at the time of the preparation of the projections, and it described the assumptions associated with the variables presented in CTF table 5.

83. The particulars of the key assumptions were as follows: the growth of the economy and the population will continue; fuel prices will change as projected in the World Energy Outlook; the use of passenger vehicles will increase following the economic growth and population increase, which will also cause an increase in the use of passenger cars per household; freight transport will increase (both in tonnage and mileage) owing to economic growth and increase in services; as the Agreement on Energy for Sustainable Growth has ruled out coal use, emissions from coal will decrease; the amount of energy demand for heating stables in agriculture will increase due to livestock growth; and the contribution of biomass to energy consumption will decrease after 2025 because by then there will be almost no subsidies for use of the fuel. The Party explained that there were additional category-specific assumptions including, but not limited to, recycling, waste management and urban development. These were not presented in CTF table 5, but were used for modelling purposes in the underlying projections (see issue 5 in table 10).

84. The Netherlands did not provide information on the changes since the submission of its BR2 regarding the assumptions, methodologies, models and approaches used and on the key variables and assumptions used in the preparation of the projection scenarios. During the review, the Netherlands explained that the changes in key assumptions, variables and modelling methods were included in the NEV 2017 and are updated on an annual basis. The reference to the publication is included in the BR3.

85. Sensitivity analyses were not included in the BR3. During the review, the Netherlands explained that sensitivity analyses for different variables were performed in different years. For example, the analysis of sensitivity to the share of renewable sources used in the energy sector was performed in 2017 (see issue 1 in table 10).

(c) Results of projections

86. The projected emission levels under different scenarios, and information on the quantified economy-wide emission reduction target are presented in table 7 and the figure below.

Table 7
Summary of greenhouse gas emission projections for the Netherlands

	GHG emissions (kt CO_2 eq per year)	*Changes in relation to base-year[a] level (%)*	*Changes in relation to 1990 level (%)*
Quantified economy-wide emission reduction target under the Convention[b]	NA	NA	NA

	GHG emissions (kt CO_2 eq per year)	*Changes in relation to base-year[a] level (%)*	*Changes in relation to 1990 level (%)*
Inventory data 1990[c]	221 416.70	–1.1	NA
Inventory data 2015[c]	195 245.67	–12.8	–11.8
WEM projections for 2020[d]	171 274.00	NA	–23.3
WAM projections for 2020[d]	169 680.00	NA	–24.1
WEM projections for 2030[d]	156 177.00	NA	–29.5
WAM projections for 2030[d]	153 674.00	NA	–30.6

Note: Updated projections were provided by the Party during the review; the projections are for GHG emissions without LULUCF.

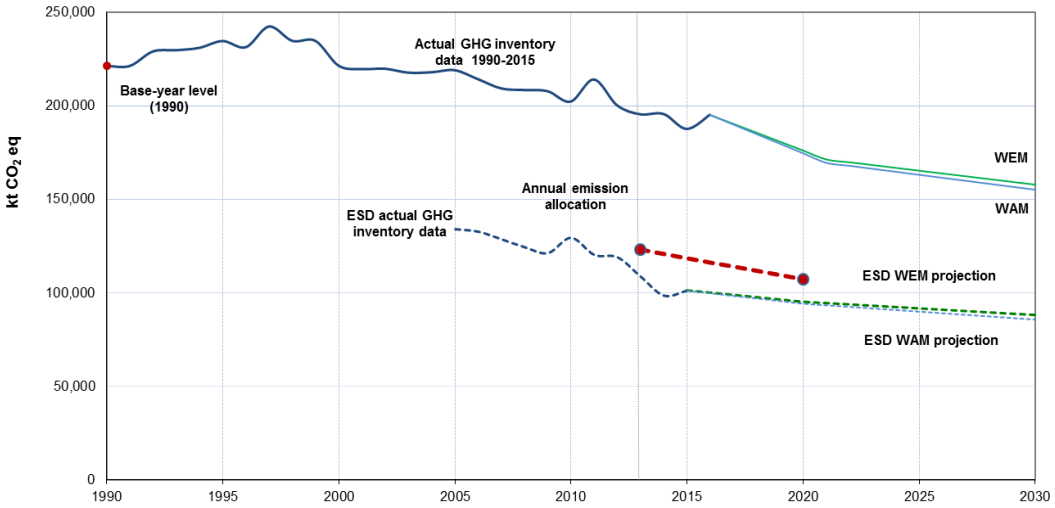
[a] "Base year" in this column refers to the base year used for the target under the Kyoto Protocol, while for the target under the Convention it refers to the base year used for that target.

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

[c] From the Netherlands' 2017 GHG inventory submission; the emissions are without LULUCF (includes indirect emissions).

[d] From the Netherlands' BR3.

Greenhouse gas emission projections reported by the Netherlands



Sources: (1) data for the years 1990–2015: the Netherlands' 2017 annual inventory submission, version 5; total GHG emissions excluding LULUCF; (2) data for the years 2016–2030: updated projections provided by the Party during the review.

87. Under the WEM scenario, the Netherlands' total GHG emissions excluding LULUCF with indirect emissions of CO_2 in 2020 and 2030 are projected to be 171,274.00 and 156,177.00 kt CO_2 eq, respectively, which represents a decrease of 23.3 and 24.1 per cent, respectively, below the 1990 level. Under the WAM scenario, emissions in 2020 and 2030 are projected to be lower than those in 1990 by 29.5 and 30.6 per cent and amount to around 169,680.00 and 153,674.00 kt CO_2 eq, respectively. The 2020 projections suggest that the Netherlands will continue contributing to the achievement of the EU target under the Convention by reducing its emission levels by 2020 under both reported scenarios (see para. 21 above).

88. During the review, the Netherlands explained that the currently tabled domestic target of a 20 per cent reduction in emissions below the 1990 level by 2020 may change to 25 per cent below the 1990 level as a result of the court case that the Government is currently involved in (see para. 19 above). The projected emission reduction values by 2020 reported in the BR3 are 23.3 and 24.1 per cent under the WEM and WAM scenarios, respectively. If a domestic target of a 25 per cent emission reduction by 2020 below the 1990 level is formally confirmed, the Netherlands may face challenges in achieving its domestic target. Thus, more

ambitious additional PaMs could be required to ensure that the Netherlands achieves its target emission level by 2020.

89. The Netherlands' target for non-ETS sectors is to reduce its total emissions by 16 per cent below the 2005 level by 2020 (see para. 16 above). The Party's AEAs, which correspond to its national emission target for non-ETS sectors, change linearly from 122,948.13 kt CO_2 eq in 2013 to 107,362.87 kt CO_2 eq in 2020. According to the projections under the WEM scenario, emissions from non-ETS sectors are estimated to reach 95,138.43 kt CO_2 eq by 2020. Under the WAM scenario, the Netherlands' emissions from non-ETS sectors in 2020 are projected to be 94,165.50 kt CO_2 eq. Under the WEM and WAM scenarios, the ESD projections for 2020 are below the AEAs for 2020 by 11.4 and 12.3 per cent, respectively (see the figure above). This suggests that the Netherlands expects to meet and overachieve its target for non-ETS sectors under the WEM scenario, if its projected emission level remains stable until 2020 (see para. 65 above).

90. The Netherlands presented the WEM and WAM scenarios by sector for 2020 and 2030, as summarized in table 8.

Table 8
Summary of greenhouse gas emission projections for the Netherlands presented by sector

	GHG emissions and removals (kt CO_2 eq)					*Change (%)*			
		2020		*2030*		*1990–2020*		*1990–2030*	
Sector	*1990*	*WEM*	*WAM*	*WEM*	*WAM*	*WEM*	*WAM*	*WEM*	*WAM*
Energy (not including transport)	128 264.00	109 062.00	107 826.00	94 749.00	93 197.00	–15.0	–15.9	–26.1	–27.3
Transport	28 140.00	29 734.00	29 276.00	30 628.00	28 887.00	5.7	4.0	8.8	2.7
Industry/ industrial processes	24 851.00	11 199.00	11 299.00	10 650.00	11 350.00	–54.9	–54.5	–57.1	–54.3
Agriculture	25 315.00	18 750.00	18 750.00	18 570.00	18 660.00	–25.9	–25.9	–26.6	–26.3
LULUCF	6 060.00	6 332.00	6 332.00	6 806.00	6 806.00	4.5	4.5	12.3	12.3
Waste	14 180.00	2 529.00	2 529.00	1 580.00	1 580.00	–82.2	–82.2	–88.9	–88.9
Total GHG emissions without LULUCF, with indirect CO_2	220 750.00	171 274.00	169 680.00	156 177.00	153 674.00	0.0	–20.2	0.0	–27.7

Sources: (1) GHG emission data: the Netherlands' 2017 annual inventory submission, version 5; (2) GHG projections data: the Netherlands' CTF tables, version 4.

91. According to the projections reported for 2020 under the WEM scenario, the most significant emission reductions are expected to occur in the energy (excluding transport), IPPU and waste sectors, amounting to projected reductions of 19,202.00 kt CO_2 eq (15.0 per cent), 13,652.00 kt CO_2 eq (54.9 per cent) and 11,651.00 kt CO_2 eq (82.2 per cent) between 1990 and 2020, respectively. These changes are largely attributable to the effects of the SDE+ subsidy scheme, the group of PaMs for built environment, the EU directive on eco-design (industry energy efficiency), the group of PaMs for industry, net metering and legislation on landfills and waste. The total effect of these policies by 2020 is projected to be 25,935.00 kt CO_2 eq.

92. The pattern of projected emissions reported for 2030 under the WEM scenario remains the same. The decrease in emissions from the energy sector (excluding transport) continues to prevail and largely defines the pattern, with the absolute decrease in projected emissions from the sector decreased by a further 14,313.00 kt CO_2 eq from 2020 and resulting in the decrease of the projected emissions for the energy sector of 33,515.00 kt CO_2 eq (26.1 per cent) for 2030 compared with 1990.

93. Emissions from the transport sector are projected to increase from 1990 to 2020 by 1,594.00 kt CO_2 eq (5.7 per cent), and by 2030 a further increase of 894.00 kt CO_2 eq is expected, bringing the projected change in the emissions from this sector between 1990 and

2030 to an increase of 2,488.00 kt CO_2 eq (8.8 per cent). Despite the projected increase in emissions from transport under the WEM scenario during 1990–2020, the projections show that the average annual rate of growth in transport emissions will be significantly moderated by the effect of PaMs (7,481.00 kt CO_2 eq in 2020), which are predicted to result in a 55.7 per cent reduction of the average annual emission growth since 1990 from the sector.

94. If additional measures are considered (i.e. under the WAM scenario), the patterns of emission reductions by 2020 presented by sector and by gas remain the same, with the energy sector (excluding transport) demonstrating the largest reduction from the 1990 level with absolute values of 20,438.00 kt CO_2 eq (15.9 per cent) by 2020 and 35,067.00 kt CO_2 eq (27.3 per cent) by 2030. Emissions from transport under the WAM scenario are projected to increase from the 1990 level by 1,136.00 kt CO_2 eq (4.0 per cent) by 2020 and by 746.0 kt CO_2 eq (2.7 per cent) by 2030. The Netherlands presented the WEM and WAM scenarios by gas for 2020 and 2030, as summarized in table 9.

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

	GHG emissions and removals (kt CO_2 eq)					*Change (%)*			
		2020		*2030*		*1990–2020*		*1990–2030*	
Gas	*1990*	*WEM*	*WAM*	*WEM*	*WAM*	*WEM*	*WAM*	*WEM*	*WAM*
CO_2	162 271.00	143 133.00	141 540.00	130 742.00	128 186.00	–11.8	–12.8	–19.4	–21.0
CH_4	32 316.00	18 077.00	18 077.00	16 669.00	16 722.00	–44.1	–44.1	–48.4	–48.3
N_2O	17 687.00	7 884.00	7 884.00	7 786.00	7 786.00	–55.4	–55.4	–56.0	–56.0
HFCs	5 606.00	1 926.00	1 926.00	805.00	805.00	–65.6	–65.6	–85.6	–85.6
PFCs	2 663.00	138.00	138.00	138.00	138.00	–94.8	–94.8	–94.8	–94.8
SF_6	207.00	116.00	116.00	38.00	38.00	–44.0	–44.0	–81.6	–81.6
NF_3	IE	IE	IE	IE	IE	NA	NA	NA	NA
Total GHG emissions without LULUCF, including indirect CO_2	**220 750.00**	**171 274.00**	**169 681.00**	**156 178.00**	**153 675.00**	**–22.4**	**–23.1**	**–29.3**	**–30.4**

Sources: (1) GHG emission data: the Netherlands' 2017 annual inventory submission, version 5; (2) GHG projections data: the Netherlands' CTF tables, version 4.

95. Under the WEM scenario, the most significant reductions from 1990 to 2020 are projected for CO_2 emissions at 19,138.00 kt CO_2 eq (11.8 per cent). The reduction is mostly due to the effects of the SDE+ subsidy scheme, the group of PaMs addressing the built environment, the EU directive on eco-design (industry energy efficiency) and the group of PaMs addressing industrial emissions. The total effect of those policies by 2020 is projected to be 22,925.00 kt CO_2 eq.

96. Under the WEM scenario, the most significant reductions from 1990 to 2030 are projected for CO_2 emissions at 31,529.00 kt CO_2 eq (19.4 per cent).

97. If additional measures are considered (i.e. in the WAM scenario), the patterns of emission reductions by 2020 presented by sector and by gas remain the same. The biggest change from 1990 and 2020 is projected for CO_2 emissions at 20,731.00 kt CO_2 eq (12.8 per cent). From 1990 to 2030 the projected change in CO_2 emissions is 34,085.00 kt CO_2 eq (21.0 per cent).

(d) Assessment of adherence to the reporting guidelines

98. The ERT assessed the information reported in the BR3 of the Netherlands and identified issues relating to transparency, completeness and adherence to the UNFCCC reporting guidelines on BRs. The findings are described in table 10.

Table 10
Findings on greenhouse gas emission projections reported in the third biennial report of the Netherlands

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
1	Reporting requirement[a] specified in paragraph 46 Issue type: transparency Assessment: encouragement	The BR3 did not include sensitivity analyses for projections under either the WEM or the WAM scenario. During the review, the Netherlands explained that sensitivity analyses for different variables are performed in different years. However, information on the results of the analyses is not in the public domain (see para. 85 above). The ERT welcomes the Party's clarification and, to improve the transparency of the model description for both the WEM and WAM scenarios, encourages the Party to include the results of the sensitivity analyses in its next BR.
2	Reporting requirement[a] specified in paragraph 31 Issue type: transparency Assessment: recommendation	The BR3 and CTF tables 6(a) and 6(c) reported emission projections for the WEM scenario that are based on the total GHG emissions without LULUCF. However, the background data for the projections were not consistent with the actual inventory data for the total GHG emissions without LULUCF for the preceding years. During the review, the Party resubmitted the CTF tables to correct this error (see para. 71 above). The ERT welcomed the Party's efforts in making corrections and accepted the resubmitted CTF tables. The ERT recommends that the Netherlands make further efforts to ensure consistency between the inventory data and its BRs in order to improve the transparency of the projections section of the report. The Party may, for example, include specific procedures in the existing quality control plan to check consistency between the actual inventory data, the background data used in the projection calculations and the content of the output projections in CTF tables 6(a–c).
3	Reporting requirement[a] specified in paragraph 43 Issue: completeness Assessment: encouragement	The BR3 did not include a description of modelling approaches for the IPPU, agriculture, waste and LULUCF sectors or the key features of the relevant models. During the review, the Party provided a detailed explanation of the modelling approaches used for each sector, including gas coverage, purpose, key assumptions, as well as strengths and weaknesses of the models used for each sector (see paras. 79 and 80 above). The ERT welcomed the Party's explanations and, to improve completeness, encourages the Netherlands to include a brief description of the modelling approach used for each sector in its next BR.
4	Reporting requirement[a] specified in paragraph 47 Issue type: transparency Assessment: encouragement	CTF table 5 and the BR3 did not include information describing the underlying assumptions associated with the variables used in the modelling (e.g. GDP, population, population growth) (see para. 81 above). During the review, the Netherlands explained that the assumptions were updated on the basis of the most recent economic developments known at the time of the preparation of the projections, and it described the assumptions associated with the variables presented in CTF table 5. The Party also explained that there were additional category-specific assumptions, including, but not limited to, recycling, waste management and urban development, which were not presented in table 5.3 of the BR3 and CTF table 5 but were used for modelling purposes in the underlying projections. The ERT welcomes the Party's explanations and, to improve transparency, encourages the Party to include the description of the key assumptions used for the modelling in its next BR.

5	Reporting requirement[b] specified in paragraph 12 Issue type: transparency Assessment: encouragement	The Netherlands did not provide information on the differences from its BR2 in the assumptions, methodologies, models and approaches used and on the key variables and assumptions used in the preparation of the projection scenarios. During the review, the Netherlands explained that the changes in key assumptions, variables and modelling methods were included in the NEV 2017 and are updated on the annual basis. The ERT welcomes the Party's clarifications and, to improve transparency, encourages the Party to include the summative description of the changes in models between different submissions in its next BR.

Note: The reporting on the requirements not included in this table is considered to be complete, transparent and adhering to the UNFCCC reporting guidelines on BRs.

[a] Paragraph number listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on NCs.

[b] Paragraph number listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on BRs.

4. Assessment of the total effect of policies and measures

(a) Technical assessment of the reported information

99. In the BR3 the Netherlands presented the estimated and expected total effect of implemented and adopted PaMs and an estimate of the total effect of its PaMs, in accordance with the WEM scenario, compared with a situation without such PaMs. Information is presented in terms of GHG emissions avoided or sequestered, by gas (on a CO_2 eq basis), in 2020. It also presented relevant information on factors and activities for each sector for 1990–2020.

100. The Netherlands reported that the total estimated effect of its adopted and implemented PaMs is 38,758.20 kt CO_2 eq. According to the information reported in the NC7, PaMs implemented in the energy sector will deliver the largest emission reductions, followed by PaMs implemented in the transport sector. Table 11 provides an overview of the total effect of PaMs as reported by the Netherlands.

101. The Netherlands reported the total effect of PaMs by gas for 2020 and 2030. The greatest reduction will be achieved in CO_2 (24 and 25.7 Mt respectively). Under both the WEM and WAM scenarios, reductions of 0.5 Mt CO_2 eq for CH_4, 0.3 Mt CO_2 eq for N_2O and 0.4 Mt CO_2 eq for F-gases are expected.

102. Additional emission reductions of 15 Mt CO_2 eq under the WEM scenario or 16 Mt CO_2 eq under the WAM scenario are expected for the period 2020–2030. From 2021 to 2030, CO_2 emissions are anticipated to decrease by 12.4 and 13.4 Mt CO_2 eq, respectively. Under both the WEM and WAM scenarios, CH_4 emissions are expected to decrease by 1.4 Mt CO_2 eq, N_2O emissions by 0.1 Mt CO_2 eq and F-gases by 1.2 Mt CO_2 eq.

103. The BR3 includes the total effect of PaMs in 1995, 2000, 2005, 2010, 2015, 2020 and 2030 by gas, but not by sector. During the review, the Party provided information on the total effect of PaMs by sector and for cross-cutting PaMs for 2030. The Party explained that an accurate distinction of the effects of PaMs between the sectors is not always possible because some of them have an integrated impact on several sectors. For example, the reduction programme for non-CO_2 GHGs includes N_2O reduction measures in industrial processes and the reduction of waste disposal in landfills, which have an effect on emissions from both the IPPU and waste sectors.

104. The reduction in CO_2 emissions already achieved through individual PaMs was not reported in the BR3. During the review, the Party explained that this information is not readily available. Although all Dutch policies are required to be evaluated periodically on an ex post basis, the evaluations are performed for individual PaMs with their own timing, system boundaries and evaluation criteria (effect on CO_2 emissions is not always a criterion). Therefore, there is no single integrated ex post evaluation for all PaMs indicating the effect

of each PaM on CO_2 emissions. Nevertheless, the monitoring of PaMs and their ex post evaluations provide crucial data that are used by experts in the NEOMS[4] modelling.

Table 11
Projected effects of the Netherlands' planned, implemented and adopted policies and measures by 2020 and 2030

	2020		*2030*
Sector	*Effect of implemented and adopted measures (kt CO_2 eq)*	*Effect of planned measures (kt CO_2 eq)*	*Effect of implemented and adopted measures (kt CO_2 eq)*
Energy (without transport)	20 714.20	237.00	39 190.00
Transport	7 481.00		9 370.00
Industrial processes	1 134.00		5 700.00[a]
Agriculture	100.00		100.00
LULUCF	NA		NA
Waste management	1 310.00		not included
Cross-cutting PaMs	8 019.00		18 360.00[b]
Total	38 521.20	237.00	68 410.00

Sources: (1) for 2020, the Netherlands' BR3 CTF table 3; (2) for 2030, materials provided by the Netherlands during the review week.

Note: The total effect of implemented and adopted PaMs is determined by comparing the WAM scenario from the NEV 2017 projections with a situation where no policy changes are assumed after 2012 to take into account the impact of the Agreement on Energy for Sustainable Growth (2013), which is the main policy framework in the Netherlands. For the establishment of this reference, the policy scenario "Without the Energy Agreement" from the NEV 2017 was used. In order to determine the impact of EU regulations and other national PaMs adopted before 2013, the projections from 2012 were used as a reference. For the EU and national PaMs, the impact of changes after 2012 was determined by comparing the WEM scenario with the "Without the Energy Agreement" scenario from the NEV 2017.

[a] Includes the group of PaMs for industry and the EU F-gas regulation.

[b] Excludes the group of PaMs for industry and the EU F-gas regulation.

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

1. Approach and methodologies used to track support provided to non-Annex I Parties

(a) Technical assessment of the reported information

105. The Netherlands reported information on the provision of support required under the Convention.

106. The Netherlands indicated what "new and additional" financial resources it has provided and clarified how it has determined such resources as being "new and additional", but it did not report on how this support is "new and additional" (see paras. 113 and 114 below). It reported the financial support that it has provided to non-Annex I Parties, distinguishing between support for mitigation and adaptation activities and recognizing the capacity-building elements of such support. It explained how it tracks finance for adaptation and mitigation.

107. The Netherlands has adopted what it regards to be a 'flexible' approach to contributing to the costs of mitigation and adaptation to climate change in developing countries. The Party described how its resources address the adaptation and mitigation needs of non-Annex I Parties. It also described how those resources assist non-Annex I Parties to mitigate and adapt to the adverse effects of climate change, facilitate economic and social response measures,

[4] The National Energy Outlook Modelling System (NEOMS) is the primary modelling suite, developed for over 20 years by the Energy Research Centre of the Netherlands and the Environmental Assessment Agency for projections and policy evaluations.

and contribute to technology development and transfer and capacity-building related to mitigation and adaptation. The Netherlands reported information on the assistance that it has provided to developing country Parties that are particularly vulnerable to the adverse effects of climate change to help them to meet the costs of adaptation to those adverse effects.

108. With regard to the most recent financial contributions aimed at enhancing the implementation of the Convention by developing countries, the Netherlands reported that its climate finance has been allocated with a focus on poverty alleviation and has targeted the poorest communities and countries, namely Bangladesh, Benin, Burundi, Ethiopia, Ghana, Indonesia, Kenya, Mali, Mozambique, Rwanda, South Sudan, State of Palestine, Uganda and Yemen. The Netherlands works with a multitude of development assistance actors that have their own processes to ensure that their activities meet the needs of the target populations. Climate profiles of recipient developing countries were used to align relevant national policies and strategies and guide climate action.

109. The Netherlands applies the Organisation for Economic Co-operation and Development Assistance Committee's definitions for climate finance allocated to support mitigation and adaptation activities, including cross-cutting activities that involve both mitigation and adaptation components. The climate-specific shares of core contributions were also reported as cross-cutting, apart from its climate-specific share to the Montreal Protocol, which was reported under mitigation.

(b) Assessment of adherence to the reporting guidelines

110. The ERT assessed the information reported in the BR3 of the Netherlands and identified an issue relating to completeness and adherence to the UNFCCC reporting guidelines on BRs. The finding is described in table 12.

Table 12
Findings on the approach and methodologies used to track support provided to non-Annex I Parties from the review of the third biennial report of the Netherlands

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
1	Reporting requirement specified in paragraph 14 Issue type: completeness Assessment: recommendation	The Netherlands stated in the BR3 that it does not track technology transfer and capacity-building and it did not provide a description of its national approach to the tracking of the technology and capacity-building support provided to developing country Parties. During the review, the Party explained that it is aware of the reporting requirement, but that it does not plan to develop an approach to tracking technology transfer and capacity-building, although it highlighted that it collects relevant information on these types of support. The ERT recommends that the Netherlands provide, in its next BR, a description of its national approach to tracking technology transfer and capacity-building support and include information on indicators relevant to these types of support, if appropriate, or, if this is not possible, provide relevant explanations.

Note: Paragraph number 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, transparent and adhering to the UNFCCC reporting guidelines on BRs.

2. Financial resources

(a) Technical assessment of the reported information

111. The Netherlands reported information on the provision of financial support required under the Convention, including on financial support provided, committed and pledged, allocation channels and annual contributions.

112. The Netherlands indicated what "new and additional" financial resources it has provided and clarified how it has determined such resources as being "new and additional". The Netherlands considers all annual disbursements approved by the Parliament in the Dutch Government's budget as "new and additional" financial resources for 2015 and 2016. The

ERT noted that for the BR1 and BR2 the Netherlands used another definition, according to which the financial resources beyond its ODA of 0.7 per cent of gross national income were defined as "new and additional".

113. The new definition of "new and additional" makes it difficult for the ERT to make a direct comparison with 2015–2016 and to quantify the trends in ODA. During the review, the Netherlands clarified that despite the economic crisis that began in 2008 it maintained its (average) ODA spending at 0.7 per cent of GDP in 2010–2012, and that during the period under review climate finance was generally additional to the 0.7 per cent ODA spending for the Millennium Development Gaols, as reported in its NC6.

114. The Netherlands reported that it delivered on its commitment of fast-start finance during 2010–2012. In the period since fast-start finance, it has chosen what it considers to be a more 'flexible' approach in line with its pledge of contributing a "fair share" to the costs of mitigation and adaptation to climate change in developing countries. The Netherlands did not clarify how it determined its "fair share" of contributions.

115. The Netherlands reported on private climate finance in line with the joint statement on tracking progress towards the USD 100 billion goal adopted by the major donors in September 2015, according to which private climate finance is defined as "private finance for climate-relevant activities that has been mobilized by public finance or by a public policy intervention, including technical assistance to enable policy and regulatory reform". The Netherlands described the methodological choices it made in defining what it considers as public and private entities, direct versus indirect mobilization, types of public finance instrument, attribution, data and point of measurement. The BR3 provides 'best estimates' of the private finance that was mobilized by public finance from the Netherlands to support developing country Parties. Table 13 includes some of the information reported by the Netherlands on its provision of financial support.

Table 13
Summary of information on provision of financial support by the Netherlands in 2015–2016
(Millions of United States dollars)

	Year of disbursement	
Allocation channel of public financial support	*2015*	*2016*
Official development assistance[a]	5 725.51	4 966.26
Climate-specific contributions through multilateral channels, including:	12.40	31.83
Global Environment Facility	0	15.77
Least Developed Countries Fund	0	0
Montreal Protocol	3.34	3.34
Green Climate Fund	9.05	12.72
Financial institutions, including regional development banks:	188.82	161.56
World Bank	133.84	139.50
International Finance Corporation	6.07	2.40
African Development Bank	37.84	13.25
Asian Development Bank	4.05	0.40
United Nations bodies, including:	42.22	62.75
United Nations Development Programme	1.64	1.52
United Nations Environment Programme	2.90	1.68
Food and Agriculture Organization of the United Nations	1.12	6.00
International Fund for Agricultural Development	18.07	39.39
Other	1.85	1.42

[a] *Sources*: (1) Query Wizard for International Development Statistics, available at http://stats.oecd.org/qwids/; (2) the Netherlands' BR3 CTF tables.

116. The Netherlands reported on its climate-specific public financial support, totalling USD 567.7 million in 2015 and USD 512.9 million in 2016. With regard to future financial pledges aimed at enhancing the implementation of the Convention by developing countries, the Netherlands committed to scaling up climate finance through better integration of climate action into development activities; mobilizing private finance; and more transparent reporting on its total contribution to the collective USD 100 billion goal. There was a decrease in the climate-specific financial support allocated in 2016 compared with 2015, although, owing to exchange rate fluctuations, the reported figures in euros show an increase. The decrease can be attributed to a decrease in the bilateral contribution from USD 324.3 million in 2015 to USD 256.8 million in 2016. Information on financial support from the public sector provided through multilateral and bilateral channels and the allocation of that support by priority is presented in table 14.

Table 14
Summary of information on channels of financial support used in 2015–2016 by the Netherlands
(Millions of United States dollars)

Allocation channel of public financial support	*Year of disbursement*				*Share (%)*	
	2015	*2016*	*Difference*	*Change (%)*	*2015*	*2016*
Support through bilateral and multilateral channels allocated for:						
Mitigation	42.42	33.37	–9.05	–21.3	7.5	6.5
Adaptation	156.93	169.90	12.96	8.3	27.6	33.1
Cross-cutting	368.39	309.65	–58.74	–15.9	64.9	60.4
Total	**567.75**	**512.92**	**–54.83**	**–9.7**	**100.0**	**100.0**
Detailed information by type of channel						
Multilateral channels						
Mitigation	3.34	3.34	0.00	0.0	1.4	1.3
Adaptation	31.21	36.62	5.41	17.3	12.8	14.3
Cross-cutting	208.88	216.17	7.29	3.5	85.8	84.4
Total	**243.44**	**256.13**	**12.70**	**5.2**	**100.0**	**100.0**
Bilateral channels						
Mitigation	39.08	30.03	–9.05	–23.2	12.1	11.7
Adaptation	125.72	133.28	7.56	6.0	38.8	51.9
Cross-cutting	159.51	93.49	-66.02	–41.4	49.2	36.4
Total	**324.31**	**256.79**	**–67.52**	**–20.8**	**100.0**	**100.0**
Multilateral compared with bilateral channels						
Multilateral	243.44	256.13	12.70	5.2	42.9	49.9
Bilateral	324.31	256.79	–67.52	–20.8	57.1	50.1
Total	**567.75**	**512.92**	**–54.83**	**–9.7**	**100.0**	**100.0**

Source: CTF tables 7, 7(a) and 7(b) of the BR3 of the Netherlands.

117. The BR3 includes detailed information on the financial support provided though multilateral, bilateral and regional channels in 2015 and 2016. More specifically, the Netherlands contributed through multilateral channels, as reported in the BR3 and in CTF table 7(a), USD 243.44 million and 256.13 million for 2015 and 2016, respectively. The contributions increased by 5.8 per cent in 2016 compared with 2015. Most of the funds (more than 80.0 per cent in both years) were allocated to addressing the cross-cutting priorities of developing country Parties. The contributions were made to specialized multilateral climate

change funds, such as the Green Climate Fund, multilateral financial institutions such as the World Bank and the International Finance Corporation, regional development banks, such as the African Development Bank and the Asian Development Bank, and specialized agencies of the United Nations, such as the United Nations Development Programme and the United Nations Environment Programme.

118. The BR3 and CTF table 7(b) also include detailed information on the total financial support provided though bilateral, regional and other channels. The Party contributed USD 324.31 million and 256.79 million in 2015 and 2016, respectively. This represents a decrease of 20.8 per cent in 2016 compared with 2015. Unlike with the multilateral channels, a larger portion of bilateral funding was allocated to addressing the adaptation and mitigation priorities of developing country Parties.

119. The BR3 provides information on the types of support provided. In terms of the focus of public financial support, as reported in CTF table 7 for 2015, the shares of the total public financial support allocated for mitigation, adaptation and cross-cutting projects were 7.5, 27.6 and 64.9 per cent, respectively. In addition, 42.9 per cent of the total public financial support was allocated through multilateral channels and 57.1 per cent through bilateral, regional and other channels. In 2016, the shares of total public financial support allocated for mitigation, adaptation and cross-cutting projects were 6.5, 33.1 and 60.4 per cent, respectively. Furthermore, 49.9 per cent of the total public financial support was allocated through multilateral channels and 50.1 per cent through bilateral, regional and other channels.

120. The ERT noted that in 2015 a majority of the financial contributions made through multilateral channels were allocated to energy, agriculture, forestry, integrated water resource management and the water, sanitation and hygiene infrastructure. Some funds were allocated for activities, such as gender empowerment, that are cross-cutting across mitigation and adaptation and other, as reported in CTF table 7(a). The corresponding allocations for 2016 were also directed mostly to agriculture, forestry, integrated water resource management and the water, sanitation and hygiene infrastructure.

121. CTF tables 7(a) and 7(b) include information on the types of financial instrument used in the provision of assistance to developing countries, which include grants, loans and equity. Insurance and loan guarantees were specifically excluded. The ERT noted that the grants provided in 2015 and 2016 accounted for most of the total public financial support.

122. In the BR3 the Netherlands clarified that it has set up a number of bilateral instruments to collaborate with the private sector to mobilize private finance, mainly for services in the environment, energy, food security and water sectors, and for trade activities. It reported on how it uses public funds to promote the provision of private sector financial support to developing countries, which it sees as pivotal to effectively increasing mitigation and adaptation efforts in developing countries. Over the 2015–2016 period, mobilized private sector finance increased from USD 98.6 million to 186.1 million.

123. The Netherlands explained its approach to reporting on private financial flows leveraged by bilateral climate finance for mitigation and adaptation activities in non-Annex I Parties, in line with the reporting by private organizations. The key underlying principles that were agreed for tracking private finance include (1) only counting finance mobilized by governments of developed countries; (2) counting finance once where multiple actors are involved; and (3) encouraging and incentivizing the most effective use of climate finance through the reporting framework.

124. During the review, the Netherlands clarified that not all partners could provide the necessary financial data at the project level; hence more aggregated data were used. In relation to the methodological choices, the Netherlands included only private finance mobilized for climate-relevant projects by loans, grants and equity, but not by guarantees and insurance. For example, the Netherlands supported funds that promote readiness for climate-relevant investments, such as the Energy Sector Management Assistance Program, the Public–Private Infrastructure Advisory Facility and the International Finance Corporation Sustainable Business Advisory. Another example is that it supported the Global Innovation Lab for Climate Finance, which identifies and pilots cutting-edge climate finance instruments that can attract private investment aimed at climate change mitigation and adaptation in developing countries. Also, in the Netherlands a process has been set up with the active

support of the Government that brings together entrepreneurs, policymakers and investors to formulate bankable business propositions that tackle climate change challenges in developing countries.

(b) Assessment of adherence to the reporting guidelines

125. The ERT assessed the information reported in the BR3 of the Netherlands and identified an issue relating to transparency and adherence to the UNFCCC reporting guidelines on BRs. The finding is described in table 15.

Table 15
Findings on financial resources from the review of the third biennial report of the Netherlands

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
1	Reporting requirement specified in paragraph 18	The Netherlands reported in its BR3 that all funds provided in 2015 and 2016 were "new and additional". There was lack of transparency on how the "new and additional" financial resources were determined.
	Issue type: transparency Assessment: recommendation	The ERT recommends that the Netherlands provide more transparent information on how it has determined the financial resources as "new and additional" in its next BR. For example, if the allocation is made in comparison with the budget for previous years, it would be useful to provide the relevant figures.

Note: Paragraph number 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, transparent and adhering to the UNFCCC reporting guidelines on BRs.

3. Technology development and transfer

(a) Technical assessment of the reported information

126. The Netherlands provided information on steps, measures and activities related to technology transfer, access and deployment benefiting developing countries, including information on activities undertaken by the public and private sectors. The Netherlands stated that it does not track technology development and transfer and provided an illustrative list of activities supported, in a format that it stated had been brought in line with the improved format for the CTF tables used for the BR2 and BR3. The examples include the Energising Development partnership programme, the Integrated Seed Sector Development programme in Ethiopia, the Integrated Seed Sector Development programme and the Integrated Seed Sector Development programme plus in Uganda, and the Ghana Climate Innovation Centre. The Netherlands stated in its submission that technology development and transfer form an integral part of many activities related to climate change mitigation and adaptation, and both private sector and knowledge institutes are partners in providing support.

127. During the review, the Netherlands illustrated how some of the activities enhance endogenous capacities and the roles played by the private sector and knowledge institutes. The Netherlands provided examples of support provided for the deployment and enhancement of the endogenous capacities and technologies of non-Annex I Parties. During the review, the Netherlands provided additional information on the 'success' story of a solar project and the 'failure' of a jatropha project.

128. The ERT took note of the information provided in CTF table 8 on recipient countries, target areas, measures and focus sectors of technology transfer programmes. The Party provided information on sources of funding (i.e. private and/or public) and whether the implemented activities were undertaken by the private or the public sector.

129. The ERT noted that the Netherlands provided a list of activities providing support for technology development and transfer. Support for technology development and transfer forms an integral part of many activities related to climate change mitigation and/or adaptation, encompassing both hardware (equipment) and software (know-how, methods and practices). Both the private sector and several knowledge institutes are partners in providing such support.

130. The Netherlands provided information, by way of a list of projects and activities, 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.

(b) Assessment of adherence to the reporting guidelines

131. The ERT assessed the information reported in the BR3 of the Netherlands and identified issues relating to completeness and adherence to the UNFCCC reporting guidelines on BRs. The findings are described in table 16.

Table 16
Findings on technology development and transfer from the review of the third biennial report of the Netherlands

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
1	Reporting requirement specified in paragraph 21 Issue type: completeness Assessment: recommendation	The Netherlands did not report in its BR3 on its support for the development of endogenous capacities and technologies of non-Annex I Parties. During the review, the Party provided the ERT with examples of how endogenous capacities and technologies were enhanced, and examples of projects deemed to be successes or failures. The ERT reiterates the recommendation made in the previous review report that the Netherlands provide information on its support for the development and enhancement of the endogenous capacities and technologies of non-Annex I Parties.
2	Reporting requirement specified in paragraph 21 Issue type: transparency Assessment: encouragement	The Netherlands provided the example of a solar energy project as a success and of a jatropha project as a failure, but it did not provide information on how or why the projects were deemed as such. The ERT encourages the Netherlands to clarify the criteria used to identify projects as successful or failed.

Note: Paragraph number 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, transparent and adhering to the UNFCCC reporting guidelines on BRs.

4. Capacity-building

(a) Technical assessment of the reported information

132. In the BR3 and CTF table 9 the Netherlands supplied information on how it has provided capacity-building support for mitigation, adaptation and technology that responds to the existing and emerging needs identified by non-Annex I Parties. The Netherlands stated that it does not consistently track capacity-building for climate action and it described individual measures and activities related to capacity-building support in textual and tabular format. Examples include Partners for Resilience, which contributes to the resilience of communities by integrating climate change adaptation, ecosystem management and restoration into disaster risk reduction, and strengthens capacities to reduce impacts of disasters. Projects such as the Energising Development partnership, the Integrated Seed Sector Development programmes in Ethiopia and Uganda, and the Ghana Climate Innovation Centre are examples of providing support for the development and enhancement of endogenous capacities and technologies.

133. The Netherlands reported that it has supported climate-related capacity development activities relating to adaptation and mitigation as part of projects in other sectors, such as agriculture, food security, policy and research. The Netherlands also reported that it has responded to the existing and emerging capacity-building needs of non-Annex I Parties as part of its development cooperation financed from its budget for foreign trade and development cooperation. An illustrative list of activities that were at the implementation phase in 2015–2016 was provided in the BR3 and the list includes support through various

national institutions and the World Research Institute, which assist in policy and planning through knowledge management, research and technical assistance leading to climate-resilient development.

134. In pursuit of its objective to assist the poorest communities and countries, the Netherlands works with a multitude of relevant actors to ensure that their activities meet the needs of their target population. The Netherlands maintains a bilateral aid relationship with the countries on which it has prepared country profiles with information and guidance on relevant policies and strategies of the national government. CTF table 9 provides a list of mainly adaptation activities that the Party supports in the least developed countries, small island developing States, Indonesia and some African countries.

(b) Assessment of adherence to the reporting guidelines

135. The ERT assessed the information reported in the BR3 of the Netherlands and recognized that the reporting is complete, transparent and adhering to 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.

III. Conclusions and recommendations

136. The ERT conducted a technical review of the information reported in the BR3 and CTF tables of the Netherlands in accordance with the UNFCCC reporting guidelines on BRs. The ERT concludes that the reported information mostly adheres to the UNFCCC reporting guidelines on BRs and provides 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; progress made by the Netherlands in achieving its target; and the Party's provision of support to developing country Parties.

137. The Netherlands's total GHG emissions, excluding LULUCF and including indirect CO_2 emissions, covered by its quantified economy-wide emission reduction target were estimated to be 11.8 per cent below its 1990 level, whereas total GHG emissions, including LULUCF and including indirect CO_2 emissions, were 11.2 per cent below its 1990 level, in 2015.

138. The decrease in emissions was driven by CH_4, N_2O and F-gases, which have declined by 41.2, 52.9 and 69.6 per cent, respectively, and the notable decrease in emissions from energy use in non-energy industries. The CH_4 emission trend was driven by the decreasing number of livestock in agriculture and substantially falling CH_4 emissions from landfill sites. N_2O emissions have decreased due mainly to the reduction in the amount of manure applied to land, the reduction in fertilizer use and measures taken in chemical industry. Those factors outweighed the effects of improvements in the efficiency of energy supply and use in the industrial sector, which are the result of measures taken under the long-term agreements on energy efficiency.

139. Under the Convention the Netherlands committed to contributing to the achievement of the joint EU quantified economy-wide emission reduction target of a 20 per cent reduction in emissions below the 1990 level by 2020. The target covers all sectors and CO_2, CH_4, N_2O, HFCs, PFCs and SF_6, 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 and new market mechanisms for compliance purposes up to an established limit and subject to a number of restrictions on the origin and the type of project. Companies can make use of such units to fulfil their requirements under the EU ETS.

140. Under the ESD, the Netherlands has a target of reducing its emissions by 16 per cent below the 2005 level by 2020. In the BR3, the Netherlands reported on its progress in achieving the AEAs in 2013–2016 and the revised AEAs for 2017–2020. According to the revised EU regulations, the Netherlands' AEAs (its national emission target for non-ETS sectors) change linearly from 114,050.54 kt CO_2 eq in 2017 to 107,362.86 kt CO_2 eq in 2020. The ESD projections for 2020 are below the AEA for 2020 by 11.4 and 12.3 per cent under

the WEM and WAM scenarios, respectively. On the basis of the reported information, the ERT concludes that the Netherlands expects to meet its target for non-ETS sectors.

141. The ERT noted that the Netherlands is making progress towards its emission reduction target by implementing mitigation actions that deliver significant emission reductions. The Netherlands' main policy framework relating to energy and climate change is the Agreement on Energy for Sustainable Growth. Key legislation supporting the Netherlands' climate change goals comprises the Environmental Management Act, the Environmental Permitting Act and the Housing Act. The mitigation actions with the most significant mitigation impact are the SDE+ subsidy scheme for renewable energy production and the group of PaMs for built environment and transport. The Netherlands reported that it was not using units from market-based mechanisms to achieve its target.

142. The GHG emission projections provided by the Netherlands include those under the WEM and WAM scenarios. In the two scenarios, emissions are projected to be 23.3 and 24.1 per cent below the 1990 level in 2020, respectively. On the basis of the reported information, the ERT concludes that the Netherlands will continue contributing to the EU 2020 target of a 20 per cent emission reduction from the 1990 level under the WEM and WAM scenarios.

143. On the basis of the results of the projections for 2020 under the WEM and WAM scenarios, the ERT noted that the Netherlands may overachieve its emission reduction target by 2020.

144. The Netherlands continued to provide climate financing to developing countries in line with its climate finance programmes, such as access to renewable energy, halting deforestation, climate-smart agriculture, integrated water resource management and the climate-resilient water, sanitation and hygiene programme. It has increased its contributions by 19.7 per cent since the BR2; its public financial support in 2015 and 2016 totalled USD 567.7 million and 512.9 million per year, respectively. For those years, the Netherlands provided less support for mitigation than for adaptation. The biggest share of financial support went to cross-cutting projects, followed by the energy, agriculture, forestry and water sectors. The Netherlands provided an illustrative list of activities and projects under implementation that foster capacity-building and technology transfer in targeted developing countries.

145. In the course of the review, the ERT formulated the following recommendations for the Netherlands to improve its adherence to the UNFCCC reporting guidelines on BRs in its next BR:[5]

(a) To improve the completeness of its reporting by:

(i) Including total GHG emissions excluding LULUCF for the base year in CTF table 4 (see issue 1 in table 6);

(ii) Providing a description of its national approach to tracking technology transfer and capacity-building support and including information on indicators relevant to these types of support, if appropriate, or, if this is not possible, providing relevant explanations (see issue 1 in table 12);

(iii) Providing information on its support for the development and enhancement of the endogenous capacities and technologies of non-Annex I Parties (see issue 1 in table 16);

(b) To improve the transparency of its reporting by:

(i) Clarifying the description of the economy-wide emission reduction target (see issue 2 in table 6);

(ii) Ensuring consistency between the inventory data and the BR to improve the transparency of the projections section of the report (see issue 2 in table 10);

(iii) Providing more transparent information on how it has determined financial resources as "new and additional" (see issue 1 in table 15).

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

Annex

Documents and information used during the review

A. Reference documents

2017 GHG inventory submission of the Netherlands. Available at http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/10116.php.

BR3 of the Netherlands. Available at http://unfccc.int/files/national_reports/biennial_reports_and_iar/submitted_biennial_reports/application/pdf/625803941_netherlands-br3-1-the_netherlands_third_biennial_report_under_the_unfccc.pdf.

BR3 CTF tables of the Netherlands. Available at http://unfccc.int/files/national_reports/biennial_reports_and_iar/submitted_biennial_reports/application/vnd.openxmlformats-officedocument.spreadsheetml.sheet/625803941_netherlands-br3-1-nld_2018_v1.0_(2).xlsx.

"Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual greenhouse gas inventories". Annex to decision 24/CP.19. Available at http://unfccc.int/resource/docs/2013/cop19/eng/10a03.pdf.

"Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention". Annex to decision 13/CP.20. Available at http://unfccc.int/resource/docs/2014/cop20/eng/10a03.pdf.

Intergovernmental Panel on Climate Change. 1997. *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories*. JL Houghton, LG Meira Filho, B Lim, et al. (eds.). Paris: IPCC/Organisation for Economic Co-operation and Development/International Energy Agency. Available at https://www.ipcc-nggip.iges.or.jp/public/gl/invs1.html.

Intergovernmental Panel on Climate Change. 2006. *2006 IPCC Guidelines for National Greenhouse Gas Inventories*. S Eggleston, L Buendia, K Miwa, et al. (eds.). Hayama, Japan: Institute for Global Environmental Strategies. Available at http://www.ipcc-nggip.iges.or.jp/public/2006gl.

NC7 of the Netherlands. Available at http://unfccc.int/national_reports/items/1408.php. Additional information available at http://unfccc.int/files/national_reports/annex_i_natcom/submitted_natcom/application/pdf/annex_5_to_the_seventh_netherlands_national_communication_under_the_unfccc.pdf.

Report on the individual review of the annual submission of the Netherlands submitted in 2016. FCCC/ARR/2016/NLD. Available at http://unfccc.int/resource/docs/2017/arr/nld.pdf.

Report of the technical review of the second biennial report of the Netherlands. FCCC/TRR.2/NLD. Available at http://unfccc.int/resource/docs/2016/trr/nld.pdf.

Schoots K, Hekkenberg M and Hammingh P. 2017. *National Energy Outlook 2017.* PBL Netherlands Environmental Assessment Agency. Available at http://www.pbl.nl/en/publications/national-energy-outlook-2017.

"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 Mr. Harry Vreuls (Netherlands Enterprise Agency), including additional material. The following documents[1] were provided by the Netherlands:

The European Commission. 2017. *Commission decision (EU) 2017/1471 of 10 August 2017: amending Decision 2013/162/EU to revise Member States' annual emission allocations for the period from 2017 to 2020.* Official Journal of the European Union, L 209/53 - 55.

[1] Reproduced as received from the Party.