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Report on the technical review of the fourth biennial report of Norway

Developed country Parties were requested by decision 2/CP.17 to submit their fourth biennial report to the secretariat by 1 January 2020. This report presents the results of the technical review of the fourth biennial report of Norway, conducted by an expert review team in accordance with the "Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention". The review took place from 16 to 20 March 2020 remotely.

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Contents

Abbreviations and acronyms

AAU	assigned amount unit
Annex I Party	Party included in Annex I to the Convention
AR	Assessment Report of the Intergovernmental Panel on Climate Change
BR	biennial report
CCS	carbon dioxide capture and storage
CER	certified emission reduction
CH_4	methane
CO_2	carbon dioxide
CO_2 eq	carbon dioxide equivalent
CTF	common tabular format
ERT	expert review team
EU	European Union
EU ETS	European Union Emissions Trading System
F-gas	fluorinated gas
GHG	greenhouse gas
HFC	hydrofluorocarbon
IE	included elsewhere
IPCC	Intergovernmental Panel on Climate Change
IPPU	industrial processes and product use
KP-LULUCF activities	land use, land-use change and forestry activities under the Kyoto Protocol
LULUCF	land use, land-use change and forestry
NA	not applicable
NC	national communication
NE	not estimated
NF_3	nitrogen trifluoride
NO	not occurring
NOK	Norwegian krone(r)
non-Annex I Party	Party not included in Annex I to the Convention
Norad	Norwegian Agency for Development Cooperation
N_2O	nitrous oxide
ODA	official development assistance
OECD	Organisation for Economic Co-operation and Development
OECD DAC	Development Assistance Committee of the Organisation for Economic Co-operation and Development
PaMs	policies and measures
PFC	perfluorocarbon
REDD+	reducing emissions from deforestation; reducing emissions from forest degradation; conservation of forest carbon stocks; sustainable management of forests; and enhancement of forest carbon stocks (decision 1CP.16, para. 70)
SF_6	sulfur hexafluoride
SNOW	Statistics Norway's World model for Norway
UNFCCC reporting guidelines on BRs	"UNFCCC biennial reporting guidelines for developed country Parties"
UNFCCC reporting guidelines on NCs	"Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications"
WAM	'with additional measures'
WEM	'with measures'
WOM	'without measures'

I. Introduction and summary

A. Introduction

1. This is a report on the centralized technical review of the BR4[1] of Norway. 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 Norway, which provided comments that were considered and incorporated with revisions into this final version of the report.

3. The review was conducted together with the review of five other Annex I Parties from 16 to 20 March 2020 remotely[2] by the following team of nominated experts from the UNFCCC roster of experts: Parvana Babayeva (Azerbaijan), Souhila Bouilouta (Algeria), Hakima Chenak (Algeria), Kenel Delusca (Haiti), Ryan Deosaran (Trinidad and Tobago), Craig William Elvidge (New Zealand), Raul Jorge Garrido Vazquez (Cuba), Matej Gasperic (Slovenia), Liviu Gheorghe (Romania), Maria Ana Gonzalez Casartelli (Argentina), Yamikani Idriss (Malawi), Jean Claude Kabamba Lungenyi (Democratic Republic of the Congo), Christopher Manda (Malawi), Tendayi Marowa (Zimbabwe), Naoki Matsuo (Japan), Esther Mertens (Belgium), Detelina Petrova (Bulgaria), Mohan Poudel (Nepal), Janis Rekis (Latvia), Orlando Ernesto Rey Santos (Cuba), Kristina Saarinen (Finland), Mayuresh Sarang (Zimbabwe), Marina Shvangiradze (Georgia) and Robin White (Canada). Mr. Gasperic, Ms. Gonzalez Casartelli, Ms. Petrova, Mr. Rey Santos, Ms. Saarinen and Ms. Shvangiradze were the lead reviewers. The review was coordinated by Hajar Benmazhar, Veronica Colerio, Claudia do Valle Costa, Nalin Srivastava, Sevdalina Todorova and Sina Wartmann (secretariat).

B. Summary

4. The ERT conducted a technical review of the information reported in the BR4 of Norway in accordance with the UNFCCC reporting guidelines on BRs (annex I to decision 2/CP.17).

1. Timeliness

5. The BR4 was submitted on 20 December 2019, before the deadline of 1 January 2020 mandated by decision 2/CP.17. The CTF tables were also submitted on 20 December 2019. The CTF tables were resubmitted on 2 April 2020 to correct one minor error related to projection data identified during the review, as well as to report information in CTF tables 8 and 9, which were not completed in the original submission. The resubmission included changes to the BR4 chapter on the provision of financial, technology and capacity-building support to developing countries, and changes to CTF tables 8 and 9. Unless otherwise specified, the information and values from the latest submission are used in this report.

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

6. Issues and gaps identified by the ERT related to the reported information are presented in table 1. The information reported by Norway in its BR4 mostly adheres to the UNFCCC reporting guidelines on BRs.

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

[2] Owing to the circumstances related to the coronavirus disease 2019, the technical review of the BR submitted by Norway had to be conducted remotely.

Table 1
Summary of completeness and transparency of mandatory information reported by Norway in its fourth biennial report

Section of BR	*Completeness*	*Transparency*	*Reference to description of recommendation(s)*
GHG emissions and removals	Complete	Transparent	–
Quantified economy-wide emission reduction target and related assumptions, conditions and methodologies	Complete	Transparent	–
Progress in achievement of targets	Complete	Transparent	–
Provision of support to developing country Parties	Mostly complete	Mostly transparent	Issues 1, 3 and 4 in table 10

Note: A list of recommendations pertaining to the completeness and transparency issues identified in this table is included in chap. III below. The assessment of completeness and transparency by the ERT in this table is based only on the "shall" reporting requirements.

II. Technical review of the information reported in the fourth 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[3] excluding emissions and removals from LULUCF were 2.9 per cent higher in 2017 than in 1990, whereas total GHG emissions including net emissions or removals from LULUCF were 32.8 per cent lower over the same period. Table 2 illustrates the emission trends by sector and by gas for Norway. Note that information in this paragraph and table 2 is based on Norway's 2019 annual submission, version 1, which has not yet been subject to review. All emission data in subsequent chapters are based on Norway's BR4 CTF tables unless otherwise noted. The emissions reported in the 2019 annual submission are the same as reported in CTF table 1.

Table 2
Greenhouse gas emissions by sector and by gas for Norway for 1990–2017

	GHG emissions (kt CO_2 eq)					*Change (%)*		*Share (%)*	
	1990	*2000*	*2010*	*2016*	*2017*	*1990–2017*	*2016–2017*	*1990*	*2017*
Sector									
1. Energy	29 775.14	36 427.74	41 525.15	39 267.40	38 412.33	29.0	3.0	58.1	72.9
A1. Energy industries	7 281.65	10 956.81	15 014.71	15 124.96	15 579.69	114.0	–8.9	14.2	29.6
A2. Manufacturing industries and construction	4 254.23	4 560.32	4 457.09	3 908.47	4 024.55	–5.4	–2.4	8.3	7.6
A3. Transport	10 041.18	12 104.30	14 306.76	13 695.57	12 473.95	24.2	–3.0	19.6	23.7
A4. and A5. Other	4 724.21	3 862.50	4 047.10	3 161.18	3 085.18	–34.7	5.7	9.2	5.9
B. Fugitive emissions from fuels	3 473.87	4 934.50	3 602.70	3 366.57	3 238.31	–6.8	–3.8	6.8	6.1

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

	GHG emissions (kt CO_2 eq)					*Change (%)*		*Share (%)*	
	1990	*2000*	*2010*	*2016*	*2017*	*1990–2017*	*2016–2017*	*1990*	*2017*
C. CO_2 transport and storage	NO, NE	9.32	96.79	10.64	10.64	–	0.0	–	0.0
2. IPPU	14 497.94	12 096.55	8 182.84	8 623.86	8 631.88	–40.5	0.1	28.3	16.4
3. Agriculture	4 693.88	4 485.73	4 248.61	4 458.80	4 468.85	–4.8	0.2	9.2	8.5
4. LULUCF	–9 968.86	–24 409.14	–26 457.89	–23 778.82	–24 990.96	150.7	5.1	NA	NA
5. Waste	2 243.43	1 821.94	1 510.14	1 257.77	1 199.48	–46.5	–4.6	4.4	2.3
Gas[a]									
CO_2	35 323.02	42 515.27	46 229.18	44 462.50	43 702.23	23.7	–1.7	69.0	82.9
CH_4	5 801.21	5 697.95	5 380.08	5 093.12	5 023.51	–13.4	–1.4	11.3	9.5
N_2O	4 092.79	3 825.61	2 485.97	2 438.78	2 394.27	– 41.5	–1.8	8.0	4.5
HFCs	0.04	383.27	1 064.54	1 363.62	1 402.75	3 195 305.3	2.9	0.0	2.7
PFCs	3 894.80	1 518.45	238.39	186.17	130.96	–96.6	–29.7	7.6	0.2
SF_6	2 098.54	891.41	68.59	63.64	58.83	–97.2	–7.6	4.1	0.1
NF_3	NA, NO	NA, NO	NA, NO	NO, NA	NO, NA	–	–	–	–
Total GHG emissions excluding LULUCF	**51 210.40**	**54 831.96**	**55 466.75**	**53 607.84**	**52 712.54**	**2.9**	**–1.7**	**100.0**	**100.0**
Total GHG emissions including LULUCF	**41 241.54**	**30 422.83**	**29 008.86**	**29 829.02**	**27 721.58**	**–32.8**	**–7.1**	–	–

Source: GHG emission data: Norway's 2019 annual submission, version 1.
[a] Emissions by gas without LULUCF and including indirect CO_2.

8. The development in total emissions between 1990 and 2017 was driven mainly by factors such as strong economic and population growth, as well the expansion of petroleum extraction and the use of gas for electricity generation. These factors have led to increased use of fossil fuels (oil and gas) and consequently higher CO_2 emissions. Both emissions from offshore petroleum activities and emissions from the transport sector seem to have peaked around 2015, partly owing to electrification and use of renewables. The overall increase in emissions has been slowed by the process improvements, new technologies and emission reductions in the IPPU and waste sectors. The growth in CO_2 emissions has been almost fully offset by reductions in the emissions of other gases and sectors. In 2007, Norway's total GHG emissions peaked at an estimated 57,013.37 kt CO_2 eq.

9. In brief, Norway's national inventory arrangements were established by Parliament through the Ministry of Climate and Environment pursuant to a budget proposition (2014–2015). The national system involves interaction and cooperation between the Norwegian Environment Agency, Statistics Norway and the Norwegian Institute of Bioeconomy Research. Among the three national institutions, the Norwegian Environment Agency is the appointed national entity responsible for the preparation of the inventory and reporting to the UNFCCC. The changes in these arrangements since the BR3 include the name change of the institution responsible for the LULUCF sector from the Norwegian Forest and Landscape Institute to the Norwegian Institute of Bioeconomy Research, and the reallocation of staff roles and responsibilities and the reorganization of work areas at Statistics Norway to improve data quality by increasing contact and collaboration between data producers and inventory compilers.

2. Assessment of adherence to the reporting guidelines

10. The ERT assessed the information reported in the BR4 of Norway and recognized that the reporting is complete, transparent and thus 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.

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

1. Technical assessment of the reported information

11. For Norway the Convention entered into force on 21 March 1994. Under the Convention Norway committed to reducing its GHG emissions by 30 per cent below the 1990 base-year level by 2020. The target includes all GHGs included in the "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", namely CO_2, CH_4, N_2O, HFCs, PFCs, SF_6 and NF_3. It also includes all IPCC sources and sectors included in the annual GHG inventory. The global warming potential values used are from the AR4. Emissions and removals from the LULUCF sector are included in the target and are accounted using an activity-based approach. Norway reported that it plans to make use of market-based mechanisms to achieve its target.

12. In its BR4, Norway reported that the 30 per cent emission reduction target under the Convention was made operational through the legally binding second commitment period of the Kyoto Protocol (2013–2020). During this period, average GHG emissions should not exceed 84 per cent of the 1990 level. Norway ratified this commitment in the Doha Amendment to the Kyoto Protocol on 12 June 2014. Norway reported that compliance with its Kyoto Protocol commitment implies that the 30 per cent emission reduction target for 2020 under the Convention will also be achieved. In absolute terms, this means that Norway, with a contribution from the Kyoto Protocol mechanisms, has to account for Kyoto Protocol units corresponding to a reduction from 51,921.77 kt CO_2 eq (in the base year) to an average of 43,614.29 kt CO_2 eq for 2013–2020.

13. The relationship between the two targets is explained in Norway's submission and presentation to the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol of May 2012.[4] Norway considers the targets under the Convention and its Kyoto Protocol to be equivalent. It defined the relationship between the two targets on the basis of historical GHG emissions for 1990–2010 as reported in its 2012 annual submission. The 2020 target under the Convention corresponds to a linear declining emission trajectory starting from the 2010 level to a 30 per cent reduction in emissions by 2020 compared with the 1990 level. The emission reductions required to achieve this trajectory for 2013–2020 are equal to the reductions that correspond to an average 16 per cent reduction compared with the 1990 level for 2013–2020, which is the Party's target under the Kyoto Protocol for the second commitment period. During the review, Norway explained that it is committed to covering any remaining emissions gap pursuant to the effects of domestic PaMs under the Kyoto Protocol for 2013–2020 through the use of the flexible Kyoto Protocol mechanisms.

14. In its BR4, Norway reported information on the net contribution from KP-LULUCF activities under Article 3, paragraph 3, of the Kyoto Protocol related to afforestation, reforestation, deforestation and forest management. Norway elected to include emissions and removals from the voluntary activities of cropland management and grazing land management under Article 3, paragraph 4. Norway will account for all KP-LULUCF activities under Article 3, paragraphs 3–4, at the end of the commitment period.

15. Norway reported that it will use market-based mechanisms under the second commitment period of the Kyoto Protocol for the achievement of its quantified economy-wide reduction target under the Convention. The net contribution of units acquired through the mechanisms could reach 74 Mt for the whole 2013–2020 period, which excludes possible contributions from KP-LULUCF activities under Article 3, paragraphs 3–4, of the Kyoto Protocol and includes the units acquired through participation in the EU ETS, the carry-over from the first to the second commitment period, and the Norwegian Carbon Credit Procurement Program. Norway reported in the BR4 that the carry-over from the first commitment period of the Kyoto Protocol comprises 2.25 million CERs and 0.74 million

[4] Available at http://unfccc.int/resource/docs/2012/awg17/eng/misc01.pdf and http://unfccc.int/files/meetings/ad_hoc_working_groups/kp/application/pdf/awgkp_norway_ppt.pdf, respectively.

emission reduction units, along with 5.98 million AAUs that reflect the part of emissions from EU ETS installations in 2013 and 2014 for which Norway delivered first commitment period CERs and emission reduction units.

16. Norway has targets and commitments towards the decarbonization of the economy after 2020, whose achievement is based on a combination of using economic instruments and technological innovation. Besides its 2020 targets under the Convention and the second commitment period of the Kyoto Protocol referred to in paragraph 15 above, Norway has updated its nationally determined contribution under the Paris Agreement to a commitment to reduce its emissions by at least 50 per cent, aiming towards 55 per cent, in relation to the 1990 level by 2030. It also reported its national targets:

(a) To achieve climate neutrality by 2030;

(b) To become a low-emission society by 2050.

17. In parallel with approving the ratification of the Paris Agreement, the Norwegian Parliament asked the Government to work on the basis that Norway is to achieve climate neutrality by 2030. Beyond what is achieved by the nationally determined contribution, Norway's GHG emissions will be offset by equivalent emission reductions outside Norway by using market-based mechanisms. In June 2017, the Norwegian Parliament adopted the Climate Change Act, which established Norway's aim of becoming a low-emission society by 2050, with an 80–95 per cent reduction in GHG emissions compared with the 1990 level. The participation of Norway in the EU ETS is to be taken into account when assessing progress towards this target. As a small open economy, Norway is dependent on a similar shift in other countries. In its low-emission strategy for 2050, Norway set out its intention to increase the climate target to achieve a 90–95 per cent reduction in GHG emissions below the 1990 base-year level.

18. Norway reported on the potential scale of contribution for each source of international unit and/or allowance from market-based mechanisms expected to be used for the attainment of its economy-wide target. During the review, Norway explained that its accounting for the whole 2013–2020 period is likely to occur in 2022–2023 and not annually and therefore the scale of contribution from each type of unit and/or allowance from market-based mechanisms can only be estimated at present. The Party indicated that no units have been surrendered to date, pursuant to its commitment under the Kyoto Protocol. In its BR4, Norway referred to the revision of the EU registry regulation that will enable transfers of AAUs based on net flows in the EU ETS in 2013–2020, also indicating the likely direction of the net flows and an interval for expected acquisitions.

2. Assessment of adherence to the reporting guidelines

19. The ERT assessed the information reported in the BR4 of Norway and recognized that the reporting is complete, transparent and thus 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 achievement of the quantified economy-wide emission reduction target

1. Mitigation actions and their effects

(a) Technical assessment of the reported information

20. Norway 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. Norway reported on its policy context and legal and institutional arrangements in place for implementing its commitments and monitoring and evaluating the effectiveness of its PaMs.

21. Norway provided information on a set of PaMs similar to those previously reported. Norway also indicated that there have been no changes since its previous submission to its institutional, legal, administrative and procedural arrangements used for domestic

compliance, monitoring, reporting, archiving of information and evaluation of progress towards its target.

22. In its reporting on its PaMs, Norway provided the estimated emission reduction impacts for most of its PaMs. Where estimated impacts were not provided, the Party supplied an explanation specific to each policy or measure, for example where only limited data were available. Norway estimated the impacts of some of its PaMs as groups and explained why it had done so. The Party described the different methodologies used to estimate the impacts of its individual or groups of PaMs, such as estimating potential reductions in fuel use depending on the level of CO_2 taxes.

23. Norway reported on its self-assessment of compliance with its emission reduction targets and national rules for taking action against non-compliance, with provisions for the enforcement of compliance with emission reduction targets laid down in the Pollution Control Act, the Greenhouse Gas Emissions Trading Act and the Climate Change Act. The annual self-assessment process is conducted by the Government by assessing the Party's annual submissions of its UNFCCC-reviewed GHG inventory and projections for the WEM scenario, its AAUs, net removals and units acquired through participation in the EU ETS. Units for covering the potential compliance gap are then purchased through the Norwegian Carbon Credit Procurement Program.

24. The key overarching cross-sectoral policies reported by Norway are the EU ETS and the CO_2 tax. The EU ETS is based on a cap-and-trade principle, whereby a cap is set at the EU or European Economic Area level on the total amount of certain GHGs that can be emitted by installations covered by the system. The cap is reduced over time so that the total emissions fall. The CO_2 tax is a financial measure based on the 'polluter pays' principle, which ensures that external costs to the environment are integrated into the price of products. In addition, the Climate Change Act, adopted in 2017, provides the framework for future climate policy and for Norway meeting its emission reduction target for 2020 and beyond. The mitigation effect of the EU ETS and the CO_2 taxation relating to offshore installations is the most significant of all measures reported for both 2020 and 2030. Other cross-cutting policies that have delivered significant emission reductions are the CO_2 tax relating to mainland activities and the Norwegian Enova energy fund.

25. Norway highlighted the mitigation actions that are under development, such as CCS projects and the development of CCS technologies, the ban on the use of mineral oil for heating of buildings from 2020, initiatives to reduce emissions from peatland and bogs, restrictions on the cultivation of peatland and afforestation. However, the ERT noted that Norway did not report additional measures for meeting its 2020 emission reduction target. Table 3 provides a summary of the reported information on the PaMs of Norway.

Table 3
Summary of information on policies and measures reported by Norway

Sector	*Key PaMs*	*Estimate of mitigation impact in 2020 (kt CO_2 eq)*	*Estimate of mitigation impact in 2030 (kt CO_2 eq)*
Policy framework and cross-sectoral measures	CO_2 taxation (except CO_2 taxation of offshore installations)	1 105	1 105
	Emissions trading onshore (2008–2012)	300	300
	Emissions trading onshore (2013–2020)	IE[a]	IE
Energy	Climate policies that affect the petroleum sector (CO_2 taxation of offshore installations, the EU ETS and national regulations)	7 000	7 000
Transport	Biofuels (requirement of 12 per cent biofuels in fuel consumption for road transportation)	1 700	1 300
	Tax exemptions and other advantages for electric vehicles	400	1 600
Renewable energy	Bioenergy scheme	90	140
Energy efficiency	Energy requirements in the building code	NE	NE
IPPU	Agreement with the aluminium industry	5 800	6 400

Sector	*Key PaMs*	*Estimate of mitigation impact in 2020 (kt CO_2 eq)*	*Estimate of mitigation impact in 2030 (kt CO_2 eq)*
	Incentives for N_2O reduction in nitric acid production	2 800	2 800
Agriculture	Restrictions on cultivation of peatland	NE	13
LULUCF	Fertilization of forests	80	270
Waste	Prohibition of disposal of biodegradable waste	330	620
Other	Norwegian Enova energy fund	1 800	1 800

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

[a] In its BR4 Norway explained that, owing to the EU-wide nature of the EU ETS, its reductions may take place anywhere in the EU or European Economic Area, and are therefore reported as "IE".

(b) Policies and measures in the energy sector

26. **Energy efficiency.** Norway reports on many energy-efficiency measures. Its group of energy-efficiency measures contains obligatory measures, such as energy-efficiency building codes, including energy-efficiency measures for individual building components; voluntary agreements, such as the agreement with the aluminium industry to develop more energy-efficient aluminium production technology to reduce energy use by 15 per cent below the global average; and a wide range of taxation policies based on very high carbon taxation and other green taxation policies, which serve as the main driver for the implementation of energy-efficiency measures across the energy sector. Green taxation targets fossil fuels as well as electricity consumption, environmentally damaging chemicals, beverage packaging and registration of motor vehicles.

27. **Energy supply and renewables.** Electricity supply in Norway is almost entirely based on renewable energy. Hydropower and wind power account for over 98 per cent of energy generated in 2018.[5] For this reason, mitigation actions related to energy supply have almost no, or only a very limited, effect on GHG emission reductions in this sector.

28. **Residential and commercial sectors.** PaMs for this sector include the building codes and codes for building components, as well as the ban on the use of mineral oils for heating of buildings (effective from 2020). The Norwegian Enova energy fund provides funding and advice for energy and climate projects and supports both companies and individual households, as well as local and regional governments. Klimasats is a financial support scheme promoting emission reduction projects in Norwegian municipalities and counties.

29. **Transport sector.** In Norway, this sector is facing a complete transformation based on the National Transport Plan 2018–2029; its main goal is to reduce GHG emissions in line with the transition to a low-carbon society by 2050 and to reduce other adverse environmental impacts. Norway has adopted and implemented numerous PaMs, such as vehicle taxation and other initiatives, which provide strong incentives for the uptake of zero-emission vehicles in terms of tax advantages and other user incentives.

30. Electric cars, including both battery and fuel cell cars, are exempt from the motor vehicle registration tax and are also exempt from the traffic insurance tax and the re-registration tax. Moreover, the purchasing of electric vehicles and equipment is exempt from value added tax and electric cars are also exempt from the road usage tax since electricity is not subject to this tax. These incentives are supported by road infrastructure which promotes the use of electric vehicles. In addition, in accordance with the white paper on transportation, Norway has established a target that all new cars and light-duty vans must emit zero emissions from 2025 onward.

31. Norway has also adopted and implemented a mandatory share of biofuels in fuels sold for road transportation activities: from 1 October 2017 the mandatory share was 8 per cent, increasing to 10 per cent from 1 January 2018, 12 per cent from 1 January 2019 and 20 per cent from 1 January 2020. Biofuels sold for road transportation activities must comply with

[5] See https://www.iea.org/data-and-statistics.

sustainability criteria as set out in the EU fuel quality directive and the EU renewable energy directive.

32. The ERT noted that the effects of the Party's package of intensive and coordinated measures are reflected in the rapid increase in the percentage of electric vehicles on the road since 2012, escalating over recent years, which has resulted in a sharp decrease in CO_2 emissions from new passenger cars that is well below the EU average and a decrease in GHG emissions from the transport sector of 15.7 per cent in 2017 compared with the 2012 level.

33. **Industrial sector.** Emissions from energy consumption in manufacturing industries and construction represented 9.1 per cent of total GHG emissions for 2017. The key mitigation policy for manufacturing industries is the EU ETS.

34. **Petroleum sector.** GHG emissions from petroleum activities, including from facilities on the Norwegian continental shelf and onshore facilities, are regulated through the CO_2 Tax Act on Petroleum Activities and the Greenhouse Gas Emissions Trading Act, which are Norway's most important cross-sectoral climate policy instruments. Installations are covered by the EU ETS and are subject to the same rules on emissions trading as those within the EU; in addition, installations are required to pay CO_2 tax. For the Norwegian shelf, the combined taxation in 2019 amounted to the equivalent of NOK 710/t CO_2. Norway has experience with CCS technologies through hosting two CCS projects, the oldest of which has been in operation since 1996, and a test centre.

(c) Policies and measures in other sectors

35. **Industrial processes.** Since 2013, emissions from processes in the manufacturing industries have been covered by the EU ETS to a large extent. The EU ETS covers process emissions from the mineral industry, chemical industry and metal industry. Prior to the EU ETS, a number of agreements concerning the reduction of GHG emissions were concluded between industries and the Government of Norway, such as the agreement with the aluminium industry, and subsequently the agreement with heavy industries on reductions in emissions not covered by the EU ETS, and the agreement between the Government and the business associations representing a majority of manufacturers of gas-insulated switchgear on SF_6 emission reductions from its use and production. In addition, Norway implemented the EU F-gas regulation (EU regulation 842/2006) in 2010 and the revised F-gas regulation (EU regulation 517/2014) in 2019. From 2003 the Party also established a tax and subsequent reimbursement scheme for HFCs and PFCs, with a combined estimated mitigation impact of 700 kt CO_2 eq in 2020.

36. **Agriculture.** Norway has implemented a wide range of PaMs in the agriculture sector. Current policies and practices include a combination of regulatory measures such as restrictions on the cultivation of peatland; requirements and support for keeping livestock on pasture; economic measures, such as drainage of agricultural soils, delivery of manure for production of biogas, grants for biogas projects and a scheme to support investments in environmentally friendly practices in the agriculture sector; and information-sharing measures such as the Climate Smart Agriculture project. The impact of these measures towards the achievement of Norway's emission reduction target in 2020 is rather small compared with the impacts of measures in other sectors. Measures included in the regional agri-environmental programmes – support schemes directed at tackling environmental challenges in different parts of the country – have a combined estimated mitigation impact of 6.00 kt CO_2 eq in 2020. The mitigation impact of other measures has not been estimated.

37. **LULUCF.** Norway is implementing several PaMs in the LULUCF sector, such as fertilization of forests, higher seedling densities in existing areas of forest land, and genetic improvement and plant breeding of forest trees. Norway has also planned some additional measures such as afforestation (currently in the pilot phase) and reducing emissions from peatland and bogs. The mitigation potential of the latter measure is estimated to be 60.00 kt CO_2 eq in 2030.

38. **Waste management.** The main policy for GHG emission reduction from the waste management sector in Norway is the prohibition on disposing biodegradable waste in landfills. A measure prohibiting landfilling of wet organic waste was implemented in 2002

and replaced in 2009 by the wider prohibition on disposing that applies to all biodegradable waste.

39. In parallel, Norway is requesting landfill operators to collect the methane from landfills. In 2017, 8.0 per cent of landfill gas production was utilized to generate electricity, 54.0 per cent was flared and 38.0 per cent was used for heat production. This measure has an estimated mitigation impact of 166.00 kt CO_2 eq in 2020. Norway has also put in place regulatory measures to increase waste recycling. In addition to these regulatory measures, the Party has put in place a fiscal measure in the form of a tax on final disposal of waste; however, the mitigation effect of that measure has not been estimated.

(d) Response measures

40. Norway reported on its assessment of the economic and social consequences of its response measures. The Party presented several initiatives aimed at minimizing adverse impacts. Norway formulates its environmental, economic and energy policies on the basis of the 'polluter pays' principle and follows a market-based approach, whereby prices reflect costs including externalities. Costs of externalities of GHG emissions are reflected in levies and by participation in the EU ETS.

41. Norway has issued instructions for official studies and reports to ministries and their subordinate agencies to facilitate the assessment of the regulations, propositions and reports submitted to the Norwegian Parliament. In addition, Norway has a legal framework for environmental impact assessment, which includes assessing the social and environmental impacts of planned strategies and projects, and the involvement of all relevant stakeholders. Since October 2017, Norway has had in place a national strategy for 'green competitiveness', which aims to provide a more predictable framework for a green transition in Norway, while maintaining economic growth and creating new jobs.

42. Through international and bilateral cooperation with developed and developing countries, Norway strives to disseminate CCS information and lessons learned from projects in the petroleum sector, research and demonstration projects. Norway has initiated the Oil for Development cooperation with developing countries on fossil fuels. The initiative aims to respond to requests for assistance from developing countries in their efforts to manage petroleum resources in a way that generates economic growth and promotes the welfare of the whole population in an environmentally sound way. Furthermore, since 2007, Norway has been supporting initiatives fostering technology development and transfer as well as capacity-building efforts in developing countries to increase access to renewable energy and reduce dependence on fossil fuels, thus enhancing their resilience to the social and economic effects of response measures taken.

(e) Assessment of adherence to the reporting guidelines

43. The ERT assessed the information reported in the BR4 of Norway and recognized that the reporting is complete, transparent and thus 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

44. For 2016, Norway reported in CTF table 4 annual total GHG emissions excluding LULUCF of 53,607.84 kt CO_2 eq, which is 3.2 per cent above the 1990 level.

45. For 2017, Norway reported in CTF table 4 annual total GHG emissions excluding LULUCF of 52,712.54 kt CO_2 eq, which is 1.5 per cent above the 1990 level.

46. For 2018, Norway reported in CTF table 4 annual total GHG emissions excluding LULUCF of 52,000.00 kt CO_2 eq, which is 0.2 per cent above the 1990 level.

47. On its use of units from LULUCF activities, Norway reported in CTF tables 4 and 4(a) that with current data, in 2016, 2017 and 2018 (preliminary information) net removals

equivalent to –23.05 kt CO_2 eq, –26.08 kt CO_2 eq and –70.02 kt CO_2 eq, respectively, could offset 0.04 per cent, 0.05 per cent and 0.13 per cent, respectively, of its total GHG emissions.

48. Norway reported in CTF tables 4 and 4(b) that, with current data, it foresees the use of units from market-based mechanisms in 2016 and 2017 towards achieving its 2020 target in the amount of 9,963.00 and 9,060.00 kt CO_2 eq, respectively. Table 4 illustrates Norway's total GHG emissions, the contribution of LULUCF and the use of units from market-based mechanisms to achieve its target.

Table 4
Summary of information on the use of units from market-based mechanisms and land use, land-use change and forestry by Norway to achieve its target

Year	*Emissions excluding LULUCF (kt CO_2 eq)*	*Contribution of LULUCF (kt CO_2 eq)*	*Use of units from market-based mechanisms (kt CO_2 eq)*[a]	*Net emissions including LULUCF and market-based mechanisms (kt CO_2 eq)*
1990 (base year)	51 921.77	NA	NA	NA
2010	NA	NA	NA	NA
2011	NA	NA	NA	NA
2012	NA	NA	NA	NA
2013	54 015.24	–34.90	10 351.00	43 629.34
2014	54 127.25	–145.83	10 340.00	43 641.42
2015	54 450.03	–120.26	10 765.00	43 564.77
2016	53 607.84	–23.05	9 963.00	43 621.79
2017	52 712.54	–26.08	9 060.00	43 626.46
2018	52 000.00	–70.02b	8 316.00	43 613.98
2020 target[a]	NA	NA	NA	NA

Sources: Norway's BR4 and CTF tables 1, 2(a), 4, 4(a)I, 4(a)II, 4(b) and 6(a).
[a] Norway plans to fulfil its Convention target through use of market-based mechanisms in the second commitment period of the Kyoto Protocol.

49. The ERT noted that the contribution from LULUCF for the base year was reported as "NA" in CTF table 4. In its BR4 (chap. 4.5.2) and CTF table 4, the Party transparently explained that the contribution from LULUCF for the base year is not relevant to establishing the base-year emissions as Norway uses Kyoto Protocol accounting for LULUCF for its 2020 target.

50. In assessing the Party's progress towards achieving the 2020 target, the ERT noted that Norway's emission reduction target under the Convention is 30 per cent below the 1990 level (see para. 11 above). This target was made operational through the Party's quantified emission limitation or reduction commitment of 84 per cent of the base-year emissions for 2013–2020, as defined in the Doha Amendment. In 2017, Norway's annual total GHG emissions excluding LULUCF were 52,712.54 kt CO_2 eq, or 1.5 per cent above the base-year level under the Kyoto Protocol; preliminary information reported for 2018 indicated that annual total GHG emissions excluding LULUCF were 52,000.00 kt CO_2 eq, or 0.2 per cent above the base-year level under the Kyoto Protocol. In addition, the ERT noted that in 2017 the contribution of LULUCF was –26.08 kt CO_2 eq and the use of market-based mechanisms accounted for 9,060.00 kt CO_2 eq. In 2018, the contribution of LULUCF was –70.02 kt CO_2 eq and the use of market-based mechanisms accounted for 8,316.00 kt CO_2 eq. Based on the information reported in CTF table 4, during 2013–2018 Norway's total GHG emissions excluding LULUCF amounted to 320,912.90 kt CO_2 eq, the contribution of LULUCF amounted to 420.14 kt CO_2 eq and the use of market-based mechanisms would amount to 58,795.00 kt CO_2 eq. This results in a net figure of 261,697.76 kt CO_2 eq, which equals 75.0 per cent of Norway's assigned amount for the second commitment period of the Kyoto Protocol (348,914.30 t CO_2 eq[6]).

[6] See document FCCC/IRR/2016/NOR.

51. The ERT noted that Norway is making progress towards its emission reduction target by implementing mitigation actions that are delivering some emission reductions and by using units from the market-based mechanisms under the Convention. This progress could be enhanced through flexible mechanisms for procuring units from participation in the EU ETS, the carry-over of Kyoto Protocol units from the first to the second commitment period and the acquisition of CERs. With the use of these flexible mechanisms, the acquisition of CERs and the contribution of LULUCF, according to the results of the Party's projections, Norway could achieve its 2020 targets under the Convention and under the Kyoto Protocol.

(b) Assessment of adherence to the reporting guidelines

52. The ERT assessed the information reported in the BR4 of Norway and recognized that the reporting is complete, transparent and thus 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.

3. Projections overview, methodology and results

(a) Technical assessment of the reported information

53. Norway reported updated projections for 2020 and 2030 relative to actual inventory data for 2017 under the WEM scenario. The WEM scenario reported by Norway includes implemented and adopted PaMs up to mid-2018. As indicated in Norway's BR4, the WEM scenario reflects neither the effect of PaMs adopted after that time nor any planned PaMs or political goals and ambitions.

54. The projections are presented on a sectoral basis, using the same sectoral categories as those used in the reporting on mitigation actions, and total projections 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) for 1990–2030. The projections are also provided in an aggregated format for each sector as well as for a Party total using global warming potential values from the AR4. Norway reported on factors and activities affecting emissions for each sector.

55. Norway reported emission projections for indirect GHGs such as nitrogen oxides, ammonia, non-methane volatile organic compounds and sulfur oxides.

56. Emission projections related to fuel sold to ships and aircraft engaged in international transport were reported separately and were not included in the totals.

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

57. The methodology used for the preparation of the projections is identical to that used for the preparation of the emission projections for the NC7. The model used by the Party, SNOW,[7] is a computable general equilibrium model, reflecting the structures of economic policy, production and consumption in the Norwegian economy. The model specifies 46 industries (42 private production sectors and 4 government sectors), classified to capture important substitution possibilities with environmental implications. Furthermore, the model covers 20 consumption goods with detailed descriptions of use of energy and transport. Projections of emissions of GHGs other than CO_2 are mainly based on sector- and plant-specific information, assessed by the Norwegian Environment Agency.

58. Norway reported supporting information further explaining the methodologies and the changes made since the NC7. Since the NC7, Norway reported relevant recalculations over the whole time series of its national GHG inventory (1990–2015) due to new information related to the energy balance, specifically the use of fossil fuels for heating and transport, with emissions increasing in most years of the time series. Norway also reported that the increase in emissions was due to the reallocation of consumption of marine gas oils from international shipping to domestic coastal traffic. Norway applied a new calculation method for ammonia, nitrous oxide and nitrogen oxides from agriculture, which resulted in major changes in the sources of animal manure and agriculture.

[7] See https://www.cree.uio.no/models/snow/.

59. To prepare its projections, Norway relied on key underlying assumptions relating to increasing gross domestic product and population, increasing oil prices until 2020 and slightly decreasing by 2030, decreasing gas prices in 2020 and increasing by 2030, an increasing share of electric and plug-in hybrid cars, an increase in electricity consumption from energy-intensive industries and an increase in the EU ETS certificate price from an average of NOK 150/t CO_2 for 2018 to about NOK 230/t CO_2 in 2030. These variables and assumptions were reported in CTF table 5 and in the BR4. The assumptions were updated on the basis of the most recent economic developments known at the time of the preparation of the projections in 2017.

60. Norway provided information on the changes since the submission of its NC7 and BR3 in the assumptions, methodologies, models and approaches used in the projection scenarios. The Party also provided supporting documentation to explain the changes. Norway reported that the recalculation of the time series 1990–2015 of its national GHG inventory made it challenging to compare the projections in the BR4 with those presented in the NC7 and BR3. However, Norway reported that the main change in the projections between the BR4 and BR3 was the emissions from sectors not covered by the EU ETS, which were reported to have decreased by around 3,250.00 kt CO_2 eq for 2030 compared with the figure reported in the BR3. Norway explained that this reduction is mainly due to assumptions related to road traffic, increased use of biofuels and more rapid development of zero-emission solutions in the transport sector.

61. Norway also provided details on the climate policy presented in the national budget in 2019, reflecting strengthened policies compared with those implemented and reported in the NC7 and BR3, including a general higher CO_2 tax on mineral products; the restructuring of the motor vehicle registration tax; zero-emission cars being exempted from the motor vehicle registration tax; the increase in the share in biofuels in road transportation; expanded railway infrastructure and grants for major public transport projects; and increased funding for the Norwegian Enova energy fund. Norway reported in CTF table 5 the key variables and assumptions used in the preparation of the projection scenarios.

62. Norway also provided information on sensitivity analyses. Sensitivity analyses were conducted for a number of important assumptions, such as population trends, and oil and gas prices. On the basis of a study by Statistics Norway (Greaker and Rosnes, 2015), Norway reported in the BR4 that CO_2 emissions could be around 6 per cent lower by 2030 if population growth were more in line with the EU average of about 2 per cent per year since 2005. In the same study, Statistics Norway estimated that a supply shock causing oil and gas prices to fall by 24 per cent could cause Norwegian CO_2 emissions to increase by 8 per cent by 2030. Lower prices of fossil fuels could cause emissions from the mainland to increase more than the fall in emissions due to lower production of oil and gas. An international setback causing Norwegian export prices, including for oil and gas, to decline by 25 per cent was estimated to potentially lead to a reduction in CO_2 emissions of 14 per cent by 2030.

(c) Results of projections

63. The projected emission levels under different scenarios and information on the quantified economy-wide emission reduction target are presented in table 5 and figure 1.

Table 5
Summary of greenhouse gas emission projections for Norway

	GHG emissions (kt CO_2 eq per year)	*Change in relation to base-year level (%)*	*Change in relation to 1990 level (%)*
Kyoto Protocol base year[a]	51 921.77	NA	NA
Quantified emission limitation or reduction commitment under the Kyoto Protocol (2013–2020)	43 614.29	84.00	85.2
Quantified economy-wide emission reduction target under the Convention[b]	NA	NA	30.00

	GHG emissions (kt CO_2 eq per year)	*Change in relation to base-year level (%)*	*Change in relation to 1990 level (%)*
Inventory data 1990 (base year)	51 210.40	–1.4	NA
Inventory data 2017	52 712.55	1.5	2.9
WEM projections for 2020	50 984.00	–1.8	–0.4
WEM projections for 2030	45 009.00	–13.3	–12.1

Source: Norway's BR4 and CTF table 6.

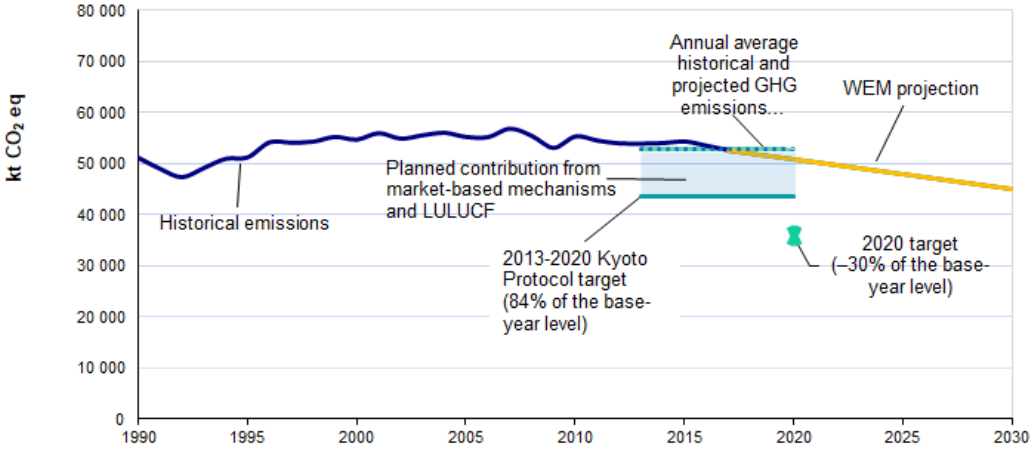
Note: The projections are for GHG emissions without LULUCF and including indirect CO_2.

[a] The Kyoto Protocol base-year level of emissions is provided in the report on the review of the report to facilitate the calculation of the assigned amount for the second commitment period of the Kyoto Protocol of Norway, contained in document FCCC/IRR/2016/NOR.

[b] The 30 per cent target under the Convention was made operational through the legally binding 2013–2020 second commitment period of the Kyoto Protocol.

Figure 1

Greenhouse gas emission projections reported by Norway



Source: Norway's BR4 and CTF tables 1 and 6 (total GHG emissions excluding LULUCF and including indirect CO_2).

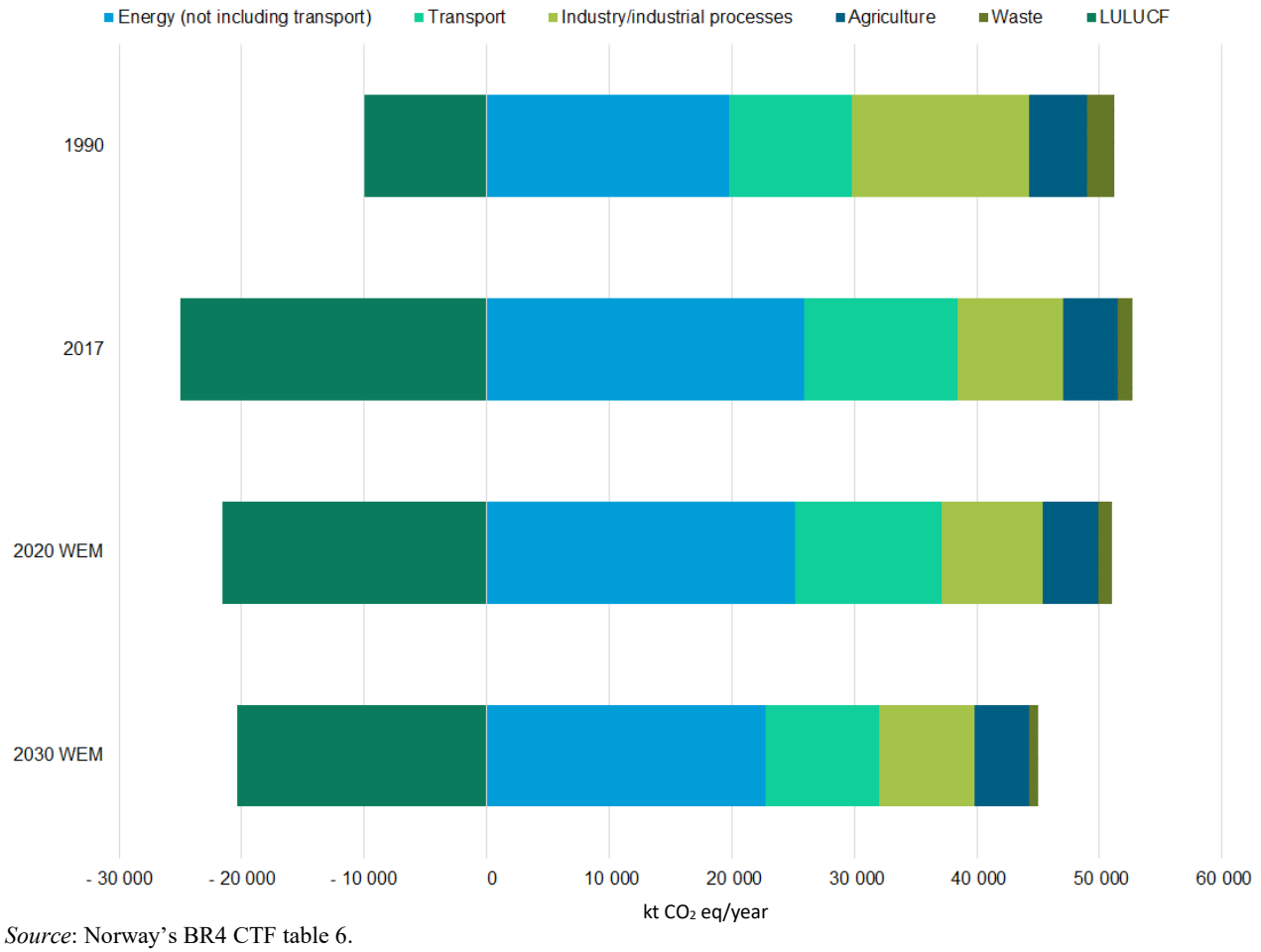
Notes: (1) The 30 per cent target under the Convention was made operational through the legally binding 2013–2020 second commitment period of the Kyoto Protocol. (2) Norway will use the contributions from LULUCF and plans to use market-based mechanisms to achieve its target for the second commitment period of the Kyoto Protocol that corresponds to Norway's 2020 target under the Convention. The required average annual contribution from LULUCF and market-based mechanisms to meet the target set for the second commitment period of the Kyoto Protocol is shown in the shaded area. This contribution is based on the difference between average annual GHG emissions (historical and projected, without LULUCF and including indirect CO_2) and the average annual emissions to be achieved in 2013–2020.

64. Norway's total GHG emissions excluding LULUCF are projected to be 50,984.00 and 45,0009.00 kt CO_2 eq in 2020 and 2030, respectively, under the WEM scenario, which is a decrease of 226.40 kt CO_2 eq (0.4 per cent) and 6,201.40 kt CO_2 eq (12.1 per cent), respectively, below the 1990 level. The 2020 projections suggest that Norway cannot be expected to achieve its 2020 target under the Convention without the acquisition of units from market-based mechanisms (see para. 50 above).

65. For the second commitment period of the Kyoto Protocol, Norway's commitment is to limit average annual emissions to 84 per cent of the base-year emissions. According to Norway's BR4, total GHG emissions excluding LULUCF for 2013–2020 are projected to be around 423,400.00 kt CO_2 eq. As a consequence of using Kyoto Protocol accounting, the contribution from LULUCF to meeting the target, estimated at 560.00 kt CO_2 eq for 2013–2020, is almost negligible. The total GHG emissions with the (minimal) contribution of LULUCF are estimated to be 73,925.70 kt CO_2 eq higher than the AAUs of Norway for 2013–2020 (348.9 million AAUs). Norway plans to offset this gap by reducing domestic emissions and by using units acquired through participation in the EU ETS and the carry-over from the first commitment period of the Kyoto Protocol.

66. Norway presented the WEM scenario by sector for 2020 and 2030, as summarized in figure 2 and table 6.

Figure 2
Greenhouse gas emission projections for Norway presented by sector



Source: Norway's BR4 CTF table 6.

Table 6
Summary of greenhouse gas emission projections for Norway 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[a]	35 323.02	42 226.00	NA	37 340.00	NA	19.5	NA	5.7	NA
CH_4	5 801.21	4 942.00	NA	4 380.00	NA	–14.8	NA	–24.5	NA
N_2O	4 092.79	2 430.00	NA	2 398.00	NA	–40.6	NA	–41.4	NA
HFCs	0.04	1 153.00	NA	626.00	NA	2 882 400.0	NA	1 564 900.0	NA
PFCs	3 894.80	161.00	NA	176.00	NA	–95.9	NA	–95.5	NA
SF_6	2 098.54	72.00	NA	89.00	NA	–96.6	NA	–95.8	NA
NF_3	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total GHG emissions without LULUCF	**51 210.40**	**50 984.00**	**NA**	**45 009.00**	**NA**	**–0.4**	**NA**	**–12.1**	**NA**

Source: Norway's BR4 CTF table 6.
[a] Norway included indirect CO_2 emissions in its projections.

67. For 2020, the most significant reductions are projected for PFCs, SF_6, N_2O and CH_4 emissions: 3,733.80 kt CO_2 eq (95.9 per cent), 2,026.54 kt CO_2 eq (96.6 per cent), 1,662.79 kt CO_2 eq (40.6 per cent) and 859.21 kt CO_2 eq (14.8 per cent) between 1990 and 2020,

respectively. For 2030, emissions of PFCs, SF_6 and N_2O are projected to be similar to the 2020 level. However, CO_2, CH_4 and HFC emissions are projected to decline by 4,886.00 kt CO_2 eq (11.6 per cent), 562.00 kt CO_2 eq (11.4 per cent) and 527.00 kt CO_2 eq (45.7 per cent) between 2020 and 2030, respectively. Between 1990 and 2030, the most significant reductions are again projected for PFCs, SF_6, N_2O and CH_4: 3.718.08 kt CO_2 eq (95.5 per cent), 2.009.54 kt CO_2 eq (95.8 per cent), 1.694.79 kt CO_2 eq (41.4 per cent), 1421.21 kt CO_2 eq (24.5 per cent). The projected reduction in CO_2 emissions reflects the expected reduction in emissions from oil and gas extraction and the transport sector, while HFC emissions are estimated to decline after 2020 as a result of the implementation of the EU F-gas regulation in Norway. The reduction in CH_4 emissions between 2020 and 2030 is projected to be due to declining landfill emissions.

68. Overall, Norway's GHG emissions excluding LULUCF are estimated to decline by 1.2 per cent per year from 2017 to 2030. Norway reported that its total GHG emissions excluding LULUCF are projected to be around 7.7 Mt CO_2 eq lower than the 2017 level in 2030. The predominant part of this decline is expected to occur in emissions from sectors not covered by the EU ETS, which are estimated to decrease by almost 6 Mt CO_2 eq from 2017 to 2030. The projected emission reduction can be attributed to the phase-out of oil-fired heating towards 2020, the closure of the gas power plant at Mongstad and a slight reduction in emissions from petroleum activities after 2020. Norway also highlighted that the effect of an estimated reduction in transport emissions as the result of the uptake of more zero-emission vehicles only becomes significant after 2020.

(d) Assessment of adherence to the reporting guidelines

69. During the review, the ERT noted some data input errors in the CTF tables and the BR4. The errors were related to CTF table 5 (row 16), where the gas price unit is displayed per barrel, and CTF table 6(a) (cell K8), where the energy projection for 2030 is displayed as a negative value. During the review, Norway provided the ERT with corrected CTF tables and included them in its resubmission.

70. The ERT assessed the information reported in the BR4 of Norway and identified issues relating to completeness and transparency and thus adherence to the UNFCCC reporting guidelines on BRs. The findings are described in table 7.

Table 7
Findings on greenhouse gas emission projections reported in the fourth biennial report of Norway

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
1	Reporting requirement specified in paragraph 29 Issue type: completeness Assessment: encouragement	The ERT notes that the BR4 does not include a WAM or a WOM projection scenario. The ERT noted the encouragement from the previous review report for the Party to report a WAM scenario, indicating the trajectory of GHG emissions and providing information about key factors and activities related to meeting its long-term targets. During the review, Norway explained that the reporting of both the WAM and the WOM projection scenario is a non-mandatory ("may") requirement, which it would consider for its next BR. The ERT reiterates the encouragement from the previous review report for the Party to report a WAM scenario. The ERT also encourages Norway to include a WOM scenario in its next BR.
2	Reporting requirement specified in paragraph 38 Issue type: completeness Assessment: encouragement	The ERT noted that Norway's BR4 does not include a diagram showing unadjusted inventory data and the WEM projection for 1990–2020. During the review, Norway explained that such figures are provided in its NCs (e.g. fig. 5.3 in the NC7). Norway also explained that it intends to include an updated figure in the NC8 but not the BR5, as these two reports will be reported jointly. The ERT encourages Norway to present in the BR a figure diagram showing unadjusted inventory data and the WEM projection scenario for the period 1990–2020 or include a cross-reference to such a diagram presented in the NC.

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
3	Reporting requirement specified in paragraph 48 Issue type: completeness Assessment: encouragement	Norway presented relevant information in textual format on factors and activities for each sector for the projection period. However, the ERT noted that the Party did not present relevant information on factors and activities for each sector over the projection period in a tabular format to provide the reader with an understanding of emission trends. During the review, Norway explained that the presentation of the information on factors and activities for each sector over the projection period in a tabular format is a non-mandatory ("may") requirement, which it will consider for its next BR. The ERT encourages Norway to present relevant information on factors and activities for each sector over the projection period, in tabular format, in order to provide the reader with a clearer understanding of emission trends.

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

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

1. Technical assessment of the reported information

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

71. In its BR4 Norway reported information on its provision of financial, technological and capacity-building support to non-Annex I Parties.

72. Norway provided details on how the support it has provided is "new and additional", including how it has determined resources as being "new and additional". In the absence of an internationally agreed definition of what constitutes "new and additional" resources, Norway defines climate financing as "new and additional" if it exceeds the ODA goal of 0.7 per cent of gross national income. Norway indicated that its total ODA has exceeded 0.7 per cent of gross national income for the reporting period (2017–2018) and has oscillated around 1 per cent. Norway explained that it has steadily increased the volume of its ODA budget, in line with economic growth, meaning that the increase in climate finance has not reduced the ODA channelled to other sectors.

73. Norway reported the 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 using the OECD DAC Rio markers, which identify development activities targeting climate change (adaptation and/or mitigation), and whether targeting climate change is a main or significant objective. The Rio markers allow an approximate quantification of financial flows that target climate-related objectives by means of a scoring system with three values (principal, significant and not targeted objectives). As a conservative estimate and in line with other major donors, Norway indicated that 40 per cent of the support provided to activities with significant climate change objectives is reported as climate finance. Contributions to cross-cutting activities targeting both adaptation and mitigation are reported as 40 per cent climate finance if neither adaptation nor mitigation are the main project objectives.

74. Norway included information on the national approach to tracking the provision of support, indicators, delivery mechanisms used and allocation channels tracked. Norway indicated that the tracking of support is based on the OECD DAC reporting system, using OECD DAC purpose codes for sector classifications. Norwegian development climate finance includes climate-related ODA and other official flows. The tracking of Norwegian development finance targeting climate change is separated into earmarked contributions and imputed multilateral core contributions. During the review, the Party provided information on mandatory assessments for technology transfer and capacity-building programmes and projects that aid in tracking those programmes. Norway did not include information on how

it has refined its approach to tracking climate support and methodologies compared with what was reported in its NC7.

75. Norway described the methodology and underlying assumptions used for collecting and reporting information on financial support, including underlying assumptions and indicators. The methodology used for preparing information on international climate support is based on the OECD DAC reporting system, which uses the Rio markers to assess climate change mitigation and adaptation. The OECD methodology for calculating imputed multilateral core support for climate change mitigation and adaptation is a two-step procedure. First, the percentage of each multilateral agency's total annual gross disbursement is calculated. This calculation is carried out in respect of an agency's disbursements of grants or concessional (ODA) loans from core resources only. The percentage calculated in step one is then multiplied by a donor's contribution in the same year to the core resources of the agency concerned, in order to arrive at the imputed flow from the donor to climate-related mitigation and adaptation activities.

76. Norway indicated that promoting effective models for public–private cooperation so that aid can be used to trigger private investments in renewable energy, and climate and environmental measures is part of national policy. This is done through Norfund (Norway's development finance institution), through support from multilateral development banks and the Green Climate Fund, and through the Norad funding schemes for private sector development. Norfund is a key channel for providing support for private sector development and investments in renewable energy, with a mandate of assisting in building sustainable businesses and industries in developing countries by providing equity capital and other risk capital. Norfund prioritizes projects that have strong development impacts. By 2019, it had committed investments totalling NOK 24,923 million across 163 projects.

77. Norway also promotes the scaling up of private investment in mitigation and adaptation in developing countries through multilateral organizations, including multilateral development banks. Norway has recently supported capital increases for both the International Bank for Reconstruction and Development, part of the World Bank Group, and the African Development Bank. Norway has implemented an additional measure for scaling up private sector development, namely a grant scheme managed by Norad that provides support to companies that can demonstrate willingness and the ability to create jobs in developing countries through sustainable investments. Lastly, Norway indicated that a further approach to mobilizing private finance is through the Norwegian Export Credit Guarantee Agency.

(b) Financial resources

78. Norway reported information on its provision of financial support to non-Annex I Parties as required under the Convention, including on financial support provided, committed and pledged, allocation channels and annual contributions. In CTF tables 7 and 7(a) Norway reported imputed multilateral core support under core/general; however, Norway clarified during the review that this support was climate-specific.

79. Norway 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 in mitigating GHG emissions and adapting to the adverse effects of climate change and any economic and social consequences of response measures, and contribute to technology development and transfer and capacity-building related to mitigation and adaptation. Norway provides a wide range of financial, technological and capacity-building support to developing country Parties in order to build their capacity to reduce CO_2 emissions and to support adaptation to take action against the adverse effects of climate change. Norway reported such information throughout the BR4 (e.g. in sections 6.1, 6.3.2 and 6.3.3, and in CTF tables 7, 7(a) and 7(b)) and provided further examples during the review.

80. With regard to the most recent financial contributions aimed at enhancing the implementation of the Convention by developing countries, Norway reported that its climate finance has been allocated on the basis of priority areas, such as reducing emissions from deforestation and forest degradation, renewable energy and climate adaptation, including risk reduction. These priority areas are based upon and in accordance with the official guidance

for the preparation and approval of Norwegian support. For example, in 2015, Germany, Norway and the United Kingdom of Great Britain and Northern Ireland announced a partnership with Colombia to protect Colombia's rainforest. Norway provided finance to this partnership of USD 10.4 million and USD 8.3 million in 2017 and 2018, respectively, which led to an emission reduction of 3.2 Mt CO_2 eq. Table 8 summarizes the information reported by Norway on its provision of financial support.

Table 8
Summary of information on provision of financial support by Norway in 2017–2018
(Millions of United States dollars)

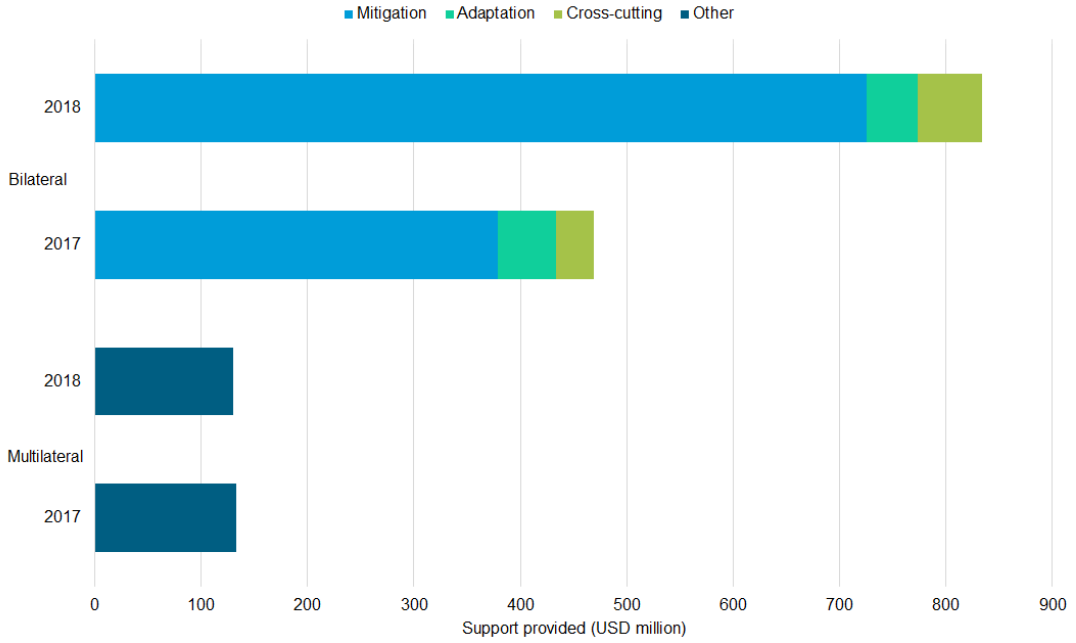
	Year of disbursement	
Allocation channel of public financial support	*2017*	*2018*
ODA	4 124.98	4 257.62
Climate-specific contributions through multilateral channels, including:	133.35	129.84
Global Environment Facility	8.57	10.49
Green Climate Fund	58.03	49.17
Other multinational climate change funds	10.42	11.32
Financial institutions, including regional development banks	50.47	52.92
United Nations bodies	5.89	5.95
Climate-specific contributions through bilateral, regional and other channels	469.00	833.54

Sources: BR4 CTF tables and Query Wizard for International Development Statistics, available at http://stats.oecd.org/qwids/.

81. The figures in table 8 for the row "Climate-specific contributions through multilateral channels" are representative of Norway's imputed multilateral ODA to climate change related projects using the OECD methodology. The OECD methodology for calculating imputed multilateral core support for climate change related projects is a two-step procedure: (1) the percentage of each multilateral agency's total annual gross disbursements to climate is calculated. This calculation is carried out only in respect of agencies' disbursements of grants or concessional (ODA) loans from core resources only; (2) the percentage to climate is multiplied by a donor's contribution in the same year to the core resources of the agency concerned to arrive at the imputed flow from that donor to climate. The figures for the row "Climate-specific contributions through bilateral, regional and other channels" are inclusive of earmarked contributions through multilateral institutions. In CTF table 7(a) the imputed multilateral core support is reported under core/general; however, Norway clarified during the review that this support was climate-specific.

82. Norway explained in section 6.2 of its BR4 that it has included earmarked support through multilateral institutions in its bilateral support estimations. This classification is different from the one used in previous reports submitted by Norway. In CTF tables 7 and 7(a) as well as its BR4 Norway reported its support though multilateral channels under the core/general classification. Norway reported on its climate-specific public financial support, totalling USD 469.0 million in 2017 and USD 833.5 million in 2018. This large increase in 2018 is mainly a result of renewable energy investments by Norfund. The Party has increased its contributions by 35.3 per cent since the BR3, as reported in its local currency and in United States dollars. During the reporting period, Norway placed a particular focus on developing country Parties in Africa (with specific emphasis on countries in sub-Saharan Africa) to which it allocated USD 146 million (31 per cent of the total earmarked support) in 2017 and USD 454 million (54 per cent of the total earmarked support) in 2018. The ERT noted that Norway reported in CTF table 7(b) its bilateral support allocated to non-Annex I Parties in 2017 and 2018. Information on financial support from the public sector provided through multilateral and bilateral channels and the allocation of that support by target area is presented in figure 3 and table 9.

Figure 3
Provision of financial support by Norway in 2017–2018



Source: Norway's BR4 CTF tables 7, 7(a) and 7(b). In CTF tables 7 and 7(a) the imputed multilateral core support is reported under core/general; however, Norway clarified during the review that this support was climate-specific.

Table 9
Summary of information on channels of financial support used in 2017–2018 by Norway
(Millions of United States dollars)

	Year of disbursement				*Share (%)*	
Allocation channel of public financial support	*2017*	*2018*	*Difference*	*Change (%)*	*2017*	*2018*
Detailed information by type of channel						
Multilateral channels						
Mitigation	–	–	–	–	–	–
Adaptation	–	–	–	–	–	–
Cross-cutting	–	–	–	–	–	–
Other[a]	133.35	129.84	–3.51	–2.63	100.0	100.0
Total multilateral[a]	**133.35**	**129.84**	**–3.51**	**–2.63**	**100.0**	**100.0**
Bilateral channels						
Mitigation	378.80	725.70	346.89	91.6	80.8	87.1
Adaptation	54.22	47.97	–6.26	–11.5	11.6	5.8
Cross-cutting	35.97	59.88	23.90	66.4	7.7	7.2
Other	–	–	–	–	–	–
Total bilateral	**469.00**	**833.54**	**364.54**	**77.7**	**100.0**	**100.0**
Total multilateral and bilateral	**602.35**	**963.38**	**361.03**	**59.94**	**100.0**	**100.0**

Source: Norway's BR4 CTF tables 7, 7(a) and 7(b). In CTF table 7 the imputed multilateral core support is reported under core/general; however, Norway clarified during the review that this support was climate-specific.

[a] Figures are representative of Norway's imputed multilateral core contributions as calculated using the OECD methodology and referred to in table 8.

83. The BR4 includes detailed information on the financial support provided though multilateral, bilateral and regional channels in 2017 and 2018. More specifically, Norway contributed through multilateral channels, as reported in the BR4 and in CTF table 7(a), USD 133.3 million and 129.8 million for 2017 and 2018, respectively. As stated in paragraph 76

above, the climate-specific contributions though multilateral channels are classified under core/general contributions in the CTF tables and are based on the OECD methodology for calculation imputed multilateral ODA to climate. The contributions were made through specialized multilateral climate change funds, such as the Global Environment Facility, the Green Climate Fund, the Strategic Climate Fund, the Global Green Growth Institute and the Multilateral Fund for the Implementation of the Montreal Protocol.

84. The BR4 and CTF table 7(b) also include detailed information on the total financial support provided though bilateral and regional (USD 469.0 million and USD 833.5 million) channels in 2017 and 2018, respectively.

85. The BR4 provides information on the types of support provided. In terms of the focus of public financial support, as reported in CTF table 7 for 2017, the shares of the total public financial support allocated for mitigation, adaptation and cross-cutting activities were 80.8, 11.6 and 7.7 per cent, respectively. In 2018, the shares of total public financial support allocated for mitigation, adaptation and cross-cutting activities were 87.1, 5.8 and 7.2 per cent, respectively.

86. The ERT noted that in 2017 a majority of financial contributions made through multilateral channels were allocated to general environmental protection, energy generation from renewable sources, energy policy and agriculture, as reported in CTF table 7(a). The corresponding allocations for 2018 were directed mostly to general environmental protection, heating, cooling and energy distribution and energy policy, as well as energy generation from renewable sources and agriculture. In 2017 a majority of financial contributions made through bilateral and regional channels were allocated to general environmental protection, forestry, agriculture, government and civil society, education and energy generation from renewable sources, as reported in CTF table 7(b). The corresponding allocations for 2018 remained almost identical to those for 2017.

87. CTF tables 7(a) and 7(b) include information on the types of financial instrument used for providing assistance to developing countries, which include grants and private sector investments. The ERT noted that the grants provided in 2017 and 2018 accounted for most of the total public financial support.

88. In the BR4 Norway provided examples showing that private finance is mobilized for exporting goods, technologies and services in the energy sector. In 2017–2018, Norfund's financial interventions mobilized USD 49 million from the private sector for renewable energy investments in developing countries. Norway reported on how it uses public funds to promote private sector financial support for developing countries by providing instruments in the private sector in developing countries through syndicated loans and direct investment in companies and special purpose vehicles.

89. Norway explained its approach and highlighted its success stories in reporting on private financial flows leveraged by bilateral climate finance for mitigation and adaptation activities in non-Annex I Parties and its success stories in reporting private sector climate finance using the OECD DAC. The OECD DAC has been working to establish an international standard for measuring resources mobilized from the private sector through official development finance interventions and has developed methodologies for a broad range of instruments (e.g. syndicated loans and direct investment in companies). Norway described its policy to promote effective models for public–private cooperation through Norfund, Norad and the Norwegian Export Credit Guarantee Agency (see para. 77 above). Norway highlighted in the BR4 (section 6.5) the private sector investments in renewable energy mobilized by Norfund's interventions. For example, in 2017, Norfund and Scatec Egypt conducted a solar energy mitigation project through direct investment and special purpose vehicles, with Norfund committing USD 13.3 million and Scatec Egypt committing USD 35.3 million.

(c) Technology development and transfer

90. Norway 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. Norway provided examples of support provided for the deployment and enhancement of the endogenous capacities and technologies

of non-Annex I Parties. One example of such support provided is the funding of training courses within hydropower and renewable energy through a cooperation agreement with the International Centre for Hydropower. Approximately 25 courses are offered each year with a total of more than 500 participants from Africa, Asia and Latin America. Training courses include hydropower development, procurement and implementation, regional power trade and policy development.

91. 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. Norway supports technology transfer through a number of mechanisms and initiatives, such as the Norwegian Clean Energy for Development initiative, the Clean Energy Ministerial and the Private Finance Advisory Network. Norway also participates actively in a range of regional and international initiatives related to CCS and adaptation, such as the Global CCS Institute, the Technology Centre Mongstad and the Global Framework for Climate Services Adaptation Programme in Africa. CTF table 8 was not provided by the Party in its original submission. Within two weeks of the review week, the Party officially resubmitted its CTF tables, thereby satisfactorily addressing the issue.

92. The ERT noted that Norway reported on its measures and activities but did not report on success and failure stories in relation to technology transfer. In particular, Norway highlighted measures taken to promote, facilitate and finance the transfer and deployment of climate-friendly technologies. Through the cooperation agreement with the International Centre for Hydropower, Norway is funding training courses within the hydropower and renewable energy sectors and using its experience to transfer knowledge. The courses are hosted in Africa, Asia and Latin America as well as Norway. The Norwegian Water Resources and Energy Directorate is currently involved in long-term institutional twinning programmes with partner countries in Asia and Africa. The emphasis of the programmes is to develop the capacity of institutions and individuals with the objective of creating an enabling environment for investments in renewable energy.

93. Norway indicated that the transfer of technology and expertise in order to promote the development, availability and efficiency of clean energy constitutes an important element of its ODA and has significant environmental co-benefits that are consistent with the promotion of the objective of the Convention. Norway promotes the use of digital technology and new means of communication, including interventions based on technology transfer for climate mitigation and adaptation efforts. In relation to private finance, during the reporting period Norway stepped up its efforts to mobilize private finance for renewable energy projects and emphasized the depth of knowledge evinced by the business community in achieving technology innovation. During the reporting period (2017–2018), private investment mobilized for renewable energy projects totalled USD 49.32 million.

(d) Capacity-building

94. In CTF table 9, Norway 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. Norway described measures and activities related to capacity-building support in textual and tabular format. Investments by the private sector (Scatec Solar and SN Power) jointly with Norfund include important elements of technology transfer related to the solar and hydropower sectors. CTF table 9 was not provided by the Party in its original submission. Within two weeks of the review week, the Party officially resubmitted its CTF tables, thereby satisfactorily addressing the issue.

95. Norway reported that it has supported climate-related capacity development activities relating to adaptation (mostly agriculture and conservation), mitigation (mostly REDD+ and renewable energy), technology development and transfer, and other sectors, particularly the energy sector. Following the principles of country-driven demand as well as cooperation between donors and across programmes- Norway reported on how it has responded to the existing and emerging capacity-building needs of non-Annex I Parties. During the review, Norway provided additional information on mandatory assessments carried out to ensure the relevance of projects or programmes to the target group and the existing and emerging needs of the recipient country and/or to the priorities and plans of cooperation partners. Examples include the Carbon Sequestration Leadership Forum, which is focused on the development

of improved cost-effective technologies for CCS, and the BioCarbon Initiative for Sustainable Forest Landscapes, which promotes the reduction of GHG emissions from the land sector through efforts to reduce deforestation and forest degradation in developing countries, sustainable agriculture and smart land-use planning, policies and practices. Other such projects include the United Nations Programme on Reducing Emissions from Deforestation and Forest Degradation, and the Forest Investment Program.

2. Assessment of adherence to the reporting guidelines

96. The ERT assessed the information reported in the BR4 of Norway and identified issues relating to completeness, transparency and thus adherence to the UNFCCC reporting guidelines on BRs. The findings are described in table 10.

Table 10
Findings on provision of support to developing country Parties from the review of the fourth biennial report of Norway

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
1	Reporting requirement specified in paragraph 17 Issue type: transparency Assessment: recommendation	The Party reported in CTF table 7(b) the projects and programmes for which it has provided financial support. The ERT noted that some of the contributions listed in the table include Ukraine as a recipient country. The ERT noted that this is not in accordance with the UNFCCC reporting guidelines on BRs, which state that information is to be provided only on financial support provided to non-Annex I Parties. During the review, Norway explained that the financial support provided to Ukraine had been included in the overall totals as there had been a misunderstanding regarding the status of Ukraine based on OECD categorizations. The Party indicated that it would exclude funding provided to Ukraine in future submissions. The ERT recommends that Norway include only non-Annex I Parties as recipient countries in CTF table 7(b) or exclude the support provided to Annex I Parties from the totals.
2	Reporting requirement specified in paragraph 21 Issue type: transparency Assessment: encouragement	The Party did not provide information on success and failure stories related to technology transfer. During the review and in response to a question raised by the ERT, Norway indicated that it considers the Global Energy Transfer Feed-in Tariff pilot programme described in the BR4 (section 6.6) to be a success story. The Party did not provide any information on failure stories. The ERT reiterates the encouragement of the previous ERT for the Party to clearly identify success and failure stories related to technology transfer.
3	Reporting requirement specified in paragraph 23 Issue type: completeness Assessment: recommendation	The Party provided information in CTF table 9 on the main capacity-building activities supported by Norway. However, the ERT noted that the textual information provided in the BR4 (section 6.6) does not address how such support responds to the existing and emerging capacity-building needs identified by non-Annex I Parties. During the review, Norway explained that, based on the official guidance for the preparation and approval of Norwegian support, an assessment is made of the relevance of the project or programme to the recipient country and/or the priorities and plans of the cooperation partner. If the cooperation partner is not an authority of the grant recipient country, the guidance underlines that it might be relevant to assess the project's relevance to the target group and the needs of the recipient country. This procedure is also mandatory for capacity-building support. The ERT recommends that Norway provide information, to the extent possible, on how it has provided capacity-building support that responds to the existing and emerging capacity-building needs identified by non-Annex I Parties.
4	Reporting requirement specified in paragraph 18	In CTF tables 7 and 7(a) Norway has provided information on imputed multilateral core support for 2017 and 2018. All contributions are reported as core/general. During the review, Norway clarified that the amounts reported

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
	Issue type: transparency	under core/general in both table 7 and 7(a) were intended to be reported as climate-specific.
	Assessment: recommendation	The ERT recommends that Norway report climate-specific multilateral support in CTF tables 7 and 7(a) as climate specific as opposed to core/general in its future submissions.

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

III. Conclusions and recommendations

97. The ERT conducted a technical review of the information reported in the BR4 and CTF tables of Norway 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; the progress of Norway towards achieving its target; and the Party's provision of support to developing country Parties.

98. Norway's total GHG emissions excluding LULUCF and including indirect CO_2 covered by its quantified economy-wide emission reduction target were estimated to be 2.9 per cent above its 1990 level, whereas total GHG emissions including LULUCF and including indirect CO_2 were 32.8 per cent below its 1990 level, in 2017. Emission increases were driven by strong economic and population growth, among other drivers. Higher CO_2 emissions resulted from the transport sector and electricity generation, which dominates the energy industries sector. Those factors outweighed improvements in the efficiency of energy supply and use.

99. Under the Convention, Norway committed to achieving a quantified economy-wide emission reduction target of 30 per cent below the 1990 level by 2020. The target covers CO_2 (including indirect CO_2), CH_4, N_2O, HFCs, PFCs, SF_6 and NF_3, expressed using global warming potential values from the AR4, and covers all sources and sectors included in the annual GHG inventory. Emissions and removals from the LULUCF sector are included in the target. Norway reported that it plans to make use of market-based mechanisms to achieve its target. The 30 per cent target under the Convention was made operational through the legally binding 2013–2020 second commitment period of the Kyoto Protocol. During this period, average GHG emissions should not exceed 84 per cent of the 1990 level. In absolute terms, this means that Norway has to account for Kyoto Protocol units corresponding to a reduction from 51,921.77 kt CO_2 eq (in the base year) to an average of 43,614.29 kt CO_2 eq in 2013–2020.

100. On 7 February 2020 Norway updated and enhanced its nationally determined contribution under the Paris Agreement and committed to reducing emissions by at least 50 per cent, and aiming towards 55 per cent, by 2030 in relation to the 1990 level.

101. Norway also has a target to achieve climate neutrality by 2030. Norway's GHG emissions will be offset by equivalent emission reductions outside Norway. In addition, the Climate Change Act, adopted by the Norwegian Parliament in June 2017, established Norway's aim of becoming a low-emission society by 2050, with an 80–95 per cent reduction in GHG emissions compared with the 1990 level.

102. Norway's main policy framework relating to energy and climate change operates through the use of economic instruments, in particular taxation and the EU ETS. Key legislation supporting Norway's climate change goals includes the Greenhouse Gas Emissions Trading Act, the CO_2 Tax Act on Petroleum Activities and the Climate Change Act. The mitigation actions with the most significant mitigation impact are the EU ETS and CO_2 taxation, the tax exemptions and other advantages related to the use of electric vehicles, and historical agreements with the metal and chemical industries, mostly on reducing non-CO_2 gases.

103. Norway has put in place incentives to support the use of electric cars, including both battery and fuel cell cars, supported by road infrastructure which promotes the use of electric vehicles. The ERT noted that the effects of these measures are reflected in the rapid increase in the percentage of electric vehicles on the road since 2012, which has resulted in a sharp decrease in CO_2 emissions from new passenger cars that is well below the EU average and a decrease in GHG emissions from the transport sector of 15.7 per cent in 2017 compared with the 2012 level.

104. In assessing the Party's progress towards achieving the 2020 target, the ERT noted that Norway's emission reduction target under the Convention is 30 per cent below the 1990 level (see para. 11 above). This target was made operational through the Party's quantified emission limitation or reduction commitment of 84 per cent of the base-year emissions for 2013–2020, as defined in the Doha Amendment. In 2018, Norway's annual total GHG emissions excluding LULUCF were 52,000.00 kt CO_2 eq, or 0.2 per cent above the base-year level under the Kyoto Protocol. In addition, the ERT noted that in 2018, the contribution of LULUCF was –70.02 kt CO_2 eq and the use of market-based mechanisms accounted for 8,316.00 kt CO_2 eq. Between 2013 and 2018, Norway's annual total GHG emissions excluding LULUCF amounted to 320,912.90 kt CO_2 eq, the contribution of LULUCF amounted to 420.14 kt CO_2 eq and the use of market-based mechanisms would amount to 58,795.00 kt CO_2 eq, resulting in a net figure of 261,697.76 kt CO_2 eq, which equals 75.0 per cent of Norway's assigned amount for the second commitment period of the Kyoto Protocol.

105. The GHG emission projections provided by Norway in its BR4 correspond to the WEM scenario. Under this scenario, emissions including and excluding the LULUCF sector are projected to be 28.8 and 0.4 per cent, respectively, below the 1990 level by 2020. On the basis of the reported information on projections, the planned use of Kyoto Protocol mechanisms, the actual and planned acquisition of CERs and the contribution of LULUCF, the ERT concludes that Norway could achieve its 2020 targets under the Convention and under the Kyoto Protocol.

106. Norway continues to provide climate financing to developing countries in line with its climate finance programmes such as Norfund, Norad and the Norwegian Export Credit Guarantee Agency. It has increased its contributions by 59.5 per cent since the BR3; its support through bilateral, regional and other channels, which includes public financial support in 2017 and 2018, totalled USD 469.0 million and USD 833.5 million per year, respectively, and its imputed multilateral core support totalled USD 133.4 million and USD 129.8 million in 2017 and 2018, respectively. For those years, Norway provided more support for mitigation than for adaptation. The biggest share of financial support went to projects on general environmental protection and energy generation from renewable sources, followed by projects in the agriculture and forestry sectors.

107. Norway provided information on support for technology development and transfer and capacity-building. Examples of the promotion of technology transfer include projects on energy generation from renewable sources, energy access and energy efficiency through the Norwegian Clean Energy for Development initiative and the Clean Energy Ministerial, as well as projects on agriculture and food security through the Global Framework for Climate Services Adaptation Programme in Africa to build resilience in disaster risk management. Examples of projects that promote capacity-building include the Biocarbon Fund Initiative for Sustainable Forest Landscapes and the Forest Carbon Partnership Facility, which focuses on reducing emissions from deforestation and forest degradation in developing countries, the Carbon Sequestration Leadership Forum and the International Centre for Hydropower.

108. In the course of the review, the ERT formulated the following recommendations for Norway to improve its adherence to the UNFCCC reporting guidelines on BRs in its next BR:

(a) To improve the completeness of its reporting by providing information to the extent possible on how it has provided capacity-building support that responds to the existing and emerging capacity-building needs identified by non-Annex I Parties (see issue 3 in table 10);

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

(i) Ensuring that the financial support provided to developing country Parties reported in CTF table 7(b) includes only non-Annex I Parties as recipient countries or excludes the support provided to Annex I Parties from the totals (see issue 1 in table 10);

(ii) Reporting climate-specific multilateral support in CTF tables 7 and 7(a) as climate-specific as opposed to core/general (see issue 4 in table 10).

Annex

Documents and information used during the review

A. Reference documents

2019 GHG inventory submission of Norway. Available at https://unfccc.int/process-and-meetings/transparency-and-reporting/reporting-and-review-under-the-convention/greenhouse-gas-inventories-annex-i-parties/national-inventory-submissions-2019.

BR4 of Norway (submitted on 20 December 2019). Available at https://unfccc.int/sites/default/files/resource/Norway_BR4%20%282%29.pdf.

BR4 CTF tables of Norway (submitted on 20 December 2019). Available at https://unfccc.int/sites/default/files/resource/NOR_2020_v1.0.xlsx.

BR4 of Norway (resubmitted on 2 April 2020). Available at https://unfccc.int/sites/default/files/resource/Norways%20Fourth%20Biennial%20Report%20FINAL.pdf.

BR4 CTF tables of Norway (resubmitted on 2 April 2020). Available at https://unfccc.int/sites/default/files/resource/CTF%20tables%20nor_2020_v3.0%20FINAL.xlsx.

Compilation of economy-wide emission reduction targets to be implemented by Parties included in Annex I to the Convention. Available at https://unfccc.int/topics/mitigation/workstreams/pre-2020-ambition/compilation-of-economy-wide-emission-reduction-targets-to-be-implemented-by-parties-included-in-annex-i-to-the-convention.

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

"Guidelines for the 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.

Report on the individual review of the annual submission of Norway submitted in 2018. FCCC/ARR/2018/NOR. Available at https://unfccc.int/sites/default/files/resource/arr2018_NOR.pdf.

Report on the technical review of the third biennial report of Norway. FCCC/TRR.3/NOR. Available at https://unfccc.int/sites/default/files/resource/TRR3_NOR.pdf.

"UNFCCC biennial reporting guidelines for developed country Parties". FCCC/SBSTA/2014/INF.6. 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 Natalie Winger (Ministry of Climate and Environment of Norway), including additional material. The following documents[1] were provided by Norway:

[1] Reproduced as received from the Party.

Greaker, M. og O. Rosnes (2015): Robuste norske klimamålsettinger. Samfunnsøkonomen nr. 1-2015, pp. 67–77.