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# Report on the technical review of the eighth national communication and the technical review of the fifth biennial report of Norway

Parties included in Annex I to the Convention were requested by decision 6/CP.25 to submit their eighth national communication to the secretariat by no later than 31 December 2022. According to decision 15/CMP.1, Parties included in Annex I to the Convention that are also Parties to the Kyoto Protocol are required to include in their national communications supplementary information under Article 7, paragraph 2, of the Kyoto Protocol. This report presents the results of the technical review of the eighth national communication and relevant supplementary information under the Kyoto Protocol of 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" and the "Guidelines for review under Article 8 of the Kyoto Protocol".

Developed country Parties were requested by decision 6/CP.25 to submit their fifth biennial report to the secretariat by no later than 31 December 2022. This report presents the results of the technical review of the fifth biennial report of 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 of these submissions took place in Oslo from 8 to 12 April 2024.

# Contents

# Abbreviations and acronyms

| | |
|---|---|
| AAU | assigned amount unit |
| AR | Assessment Report of the Intergovernmental Panel on Climate Change |
| BR | biennial report |
| CCS | carbon dioxide capture and storage |
| $CH_4$ | methane |
| $CO_2$ | carbon dioxide |
| $CO_2$ eq | carbon dioxide equivalent |
| CTF | common tabular format |
| DAC | Development Assistance Committee |
| EfD | Energy for Development |
| ERT | expert review team |
| ESR | European Union effort-sharing regulation |
| EU | European Union |
| EU ETS | European Union Emissions Trading System |
| F-gas | fluorinated gas |
| GDP | gross domestic product |
| GHG | greenhouse gas |
| GWP | global warming potential |
| HFC | hydrofluorocarbon |
| IPPU | industrial processes and product use |
| LULUCF | land use, land-use change and forestry |
| $N_2O$ | nitrous oxide |
| NA | not applicable |
| NAP | national adaptation plan |
| NC | national communication |
| NDC | nationally determined contribution |
| NE | not estimated |
| $NF_3$ | nitrogen trifluoride |
| NGO | non-governmental organization |
| NICFI | Norway's International Climate and Forest Initiative |
| NIR | national inventory report |
| NO | not occurring |
| NOK | Norwegian kroner |
| non-Annex I Party | Party not included in Annex I to the Convention |
| Norad | Norwegian Agency for Development Cooperation |
| ODA | official development assistance |
| OECD | Organisation for Economic Co-operation and Development |
| PaMs | policies and measures |
| PFC | perfluorocarbon |
| RCN | Research Council of Norway |
| 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 1/CP.16, para. 70) |
| reporting guidelines for supplementary information | "Guidelines for the preparation of the information required under Article 7 of the Kyoto Protocol. Part II: Reporting of supplementary information under Article 7, paragraph 2" |
| SDG | Sustainable Development Goal |

| | |
|---|---|
| $SF_6$ | sulfur hexafluoride |
| true-up period report | report upon expiration of the additional period for fulfilling commitments for the second commitment period of the Kyoto Protocol |
| 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' |
| WP-STAT | Working Party on Development Finance Statistics |

# I. Introduction and summary

## A. Introduction

1. This is a report on the in-country technical review of the NC8 and BR5 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" and "Part V: UNFCCC guidelines for the technical review of national communications from Parties included in Annex I to the Convention" (annex to decision 13/CP.20), and the "Guidelines for review under Article 8 of the Kyoto Protocol" (annex to decision 22/CMP.1 and annex I to decision 4/CMP.1).

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

3. The review was conducted from 8 to 12 April 2024 in Oslo by the following team of nominated experts from the UNFCCC roster of experts: Bertha Iris Argueta Tejeda (Honduras), Hoy Yen Chan (Malaysia), Carlos Lopez Compta (Spain), Ana-Maria Danila (EU), Lukas Emele (EU) and Mohan Poudel (Nepal). Hoy Yen Chan and Lukas Emele were the lead reviewers. The review was coordinated by Davor Vesligaj and Dirk Nemitz (secretariat).

## B. Summary

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

### 1. Timeliness

5. The NC8 was submitted on 21 December 2022, before the deadline of 31 December 2022 mandated by decision 6/CP.25.

6. The BR5 was submitted on 21 December 2022, before the deadline of 31 December 2022 mandated by decision 6/CP.25. The CTF tables were also submitted on 21 December 2022.

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

7. Issues and gaps identified by the ERT related to the information reported by Norway in its NC8 are presented in tables 1–2. The information reported, including the supplementary information under the Kyoto Protocol, mostly adheres to the UNFCCC reporting guidelines on NCs.

8. The ERT noted that Norway made improvements to the reporting in its NC8 compared with that in its NC7, including by addressing some recommendations and encouragements from the previous review report in the areas of national circumstances relevant to GHG emissions and removals; projections and the total effects of PaMs; financial, technological

[1] Decision 6/CP.25, annex.
[2] Decision 15/CMP.1, annex, and decision 3/CMP.11, annex III.
[3] Decision 2/CP.17, annex.

and capacity-building support; research and systematic observation; and education, training and public awareness.

Table 1
**Assessment of completeness and transparency of mandatory information reported by Norway in its eighth national communication**

| *Section of NC* | *Completeness* | *Transparency* | *Reference to description of recommendation* |
|---|---|---|---|
| Executive summary | Complete | Transparent | – |
| National circumstances relevant to GHG emissions and removals | Complete | Transparent | – |
| GHG inventory | Complete | Transparent | – |
| PaMs | Mostly complete | Transparent | Issue 2 in table I.2 |
| Projections and the total effect of PaMs | Mostly complete | Transparent | Issue 4 in table I.3 |
| Vulnerability assessment, climate change impacts and adaptation measures | Complete | Transparent | – |
| Financial resources and transfer of technology | Mostly complete | Mostly transparent | Issues 1–5 in table I.4 |
| Research and systematic observation | Complete | Transparent | – |
| Education, training and public awareness | Complete | Transparent | – |

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

Table 2
**Assessment of completeness and transparency of mandatory supplementary information under the Kyoto Protocol reported by Norway in its eighth national communication**

| *Supplementary information under the Kyoto Protocol* | *Completeness* | *Transparency* | *Reference to description of recommendation* |
|---|---|---|---|
| National system | Complete | Transparent | – |
| National registry | Complete | Transparent | – |
| Supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17 | Complete | Transparent | – |
| PaMs in accordance with Article 2 | Complete | Transparent | – |
| Domestic and regional programmes and/or arrangements and procedures | Complete | Transparent | – |
| Information under Article 10[a] | Complete | Transparent | – |
| Financial resources | Complete | Transparent | – |
| Minimization of adverse impacts in accordance with Article 3, paragraph 14 | Complete | Transparent | – |

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

9. Issues and gaps identified by the ERT related to the information reported by Norway in its BR5 are presented in table 3. The information reported mostly adheres to the UNFCCC reporting guidelines on BRs.

10. The ERT noted that Norway made improvements to the reporting in its BR5 compared with that in its BR4, by addressing some recommendations and encouragements from the previous review report in the areas of projections and the provision of financial, technological and capacity-building support to developing country Parties.

Table 3
**Summary of completeness and transparency of mandatory information reported by Norway in its fifth biennial report**

| *Section of BR* | *Completeness* | *Transparency* | *Reference to description of recommendation* |
|---|---|---|---|
| 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 | Mostly complete | Transparent | Issue 4 in table II.1 |
| Provision of support to developing country Parties | Mostly complete | Mostly transparent | Issues 1–3 in table II.2 |

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

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

## A. National circumstances relevant to greenhouse gas emissions and removals

### 1. Technical assessment of the reported information

11. The NC8 contains key data on legislation, population trends, geography and land use, climate and climate change, economic developments, energy, transport, the buildings sector, industry, trade, the services sector, agriculture, forestry, resource efficiency and wastewater. Norway is a constitutional monarchy with a democratic parliamentary system. The Storting, Norway's parliament, shapes the nation's climate policies, while the Government implements and administers related PaMs. Although not a member State of the EU, Norway has been part of the internal market since 1994 through the European Economic Area Agreement. Norway's involvement in the Agreement provides an opportunity to influence EU policymaking, including on the environment, with the implication being the adoption of relevant EU legislation.

12. The petroleum industry continues to play an important role in Norway's economy, with the petroleum sector accounting for 51 per cent of total exports in 2021. However, it is expected to become less significant in the future owing to declining resources and evolving global conditions driven by stricter climate policies and technological advancements. Additionally, in the light of its climate commitments under the Paris Agreement, Norway has acknowledged the need to transition towards pursuing stronger growth and job creation in less-carbon-intensive sectors.

13. Nearly all of Norway's electricity production derives from renewable energy sources. Thus, emissions from energy use are primarily concentrated in sectors such as manufacturing, transportation, construction and agriculture, where use of fossil fuels remains prevalent. Despite the country's population growing by 28 per cent and GDP tripling since 1990, Norway has achieved a notable annual decline in emission intensity of 2.2 per cent, attributed to the implementation of economic instruments like $CO_2$ taxes and participation in the EU ETS.

### 2. Assessment of adherence to the reporting guidelines

14. The ERT assessed the information reported in the NC8 of Norway and identified an issue relating to transparency, and thus adherence to the UNFCCC reporting guidelines on NCs. The finding is described in table I.1.

## B. Greenhouse gas inventory information[4]

### 1. Technical assessment of the reported information

15. Norway reported information in its BR5 and NC8 on its historical GHG emissions using GWP values from the AR4 and its inventory arrangements. More recent information on GHG emissions was reported in Norway's 2023 inventory submission using GWP values from the AR5. Total GHG emissions[5] excluding emissions and removals from LULUCF and including indirect $CO_2$ emissions decreased by 3.5 per cent between 1990 and 2020, whereas total GHG emissions including net emissions or removals from LULUCF and including indirect $CO_2$ decreased by 26.9 per cent over the same period. Emissions peaked in 2007 and decreased thereafter. Emissions excluding emissions and removals from LULUCF decreased in 2020–2021. The changes in total emissions were driven mainly by factors such as a significant increase in the share of electric vehicles and increased use of biofuels, which contributed to an 18.5 per cent reduction in road transport emissions in 2015–2020. In the same period, emissions from waste management and industrial processes also decreased.

16. Table 4 illustrates the emission trends by sector and by gas for Norway. The emissions reported in the 2023 inventory submission differ from the data reported in CTF table 1; the former are based on GWP values from the AR5 rather than the AR4, which affects the emission estimates. For its 2023 NIR Norway used GWP values from the AR5 for the first time, which resulted in significant recalculations of emission estimates compared with previous submissions.

Table 4
**Greenhouse gas emissions by sector and by gas for Norway for 1990–2021**

| | *GHG emissions (kt $CO_2$ eq)* | | | | | *Change (%)* | | *Share (%)* | |
|---|---|---|---|---|---|---|---|---|---|
| | *1990* | *2000* | *2010* | *2020* | *2021* | *1990–2020* | *2020–2021* | *1990* | *2021* |
| *Sector* | | | | | | | | | |
| 1. Energy | 28 397.23 | 34 303.91 | 39 514.96 | 34 023.36 | 33 741.14 | 19.8 | –0.8 | 56.0 | 69.0 |
| A1. Energy industries | 7 192.47 | 10 849.43 | 14 855.58 | 14 239.92 | 13 269.91 | 98.0 | –6.8 | 14.2 | 27.1 |
| A2. Manufacturing industries and construction | 3 415.23 | 3 480.24 | 3 369.18 | 2 715.60 | 2 853.17 | –20.5 | 5.1 | 6.7 | 5.8 |
| A3. Transport | 9 919.67 | 11 868.85 | 13 931.38 | 11 996.89 | 12 275.63 | 20.9 | 2.3 | 19.6 | 25.1 |
| A4. and A5. Other | 4 868.88 | 3 968.61 | 4 017.23 | 3 114.57 | 3 230.40 | –36.0 | 3.7 | 9.6 | 6.6 |
| B. Fugitive emissions from fuels | 3 000.99 | 4 127.45 | 3 244.81 | 1 952.75 | 2 108.95 | –34.9 | 8.0 | 5.9 | 4.3 |
| C. $CO_2$ transport and storage | NO, NE | 9.32 | 96.79 | 3.64 | 3.07 | NA | –15.5 | NA | 0.0 |
| 2. IPPU | 14 697.37 | 12 776.86 | 8 890.01 | 9 001.34 | 9 014.56 | –38.8 | 0.1 | 29.0 | 18.4 |
| 3. Agriculture | 4 946.56 | 4 715.30 | 4 494.27 | 4 648.56 | 4 701.71 | –6.0 | 1.1 | 9.8 | 9.6 |
| 4. LULUCF | –9 828.56 | –18 686.63 | –23 834.27 | –19 172.68 | –15 497.28 | –95.1 | 19.2 | NA | NA |
| 5. Waste | 2 671.28 | 2 278.08 | 2 025.81 | 1 541.37 | 1 444.55 | –42.3 | –6.3 | 5.3 | 3.0 |
| 6. Other[a] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | NA | NA | 0.0 | 0.0 |
| *Gas*[b] | | | | | | | | | |
| $CO_2$ | 34 422.30 | 41 121.24 | 45 354.06 | 40 890.43 | 40 662.91 | 18.8 | –0.6 | 67.9 | 83.2 |
| $CH_4$ | 6 982.08 | 6 919.69 | 6 247.54 | 5 288.47 | 5 256.61 | –24.3 | –0.6 | 13.8 | 10.7 |
| $N_2O$ | 3 645.21 | 3 393.81 | 2 183.11 | 2 064.80 | 2 068.77 | –43.4 | 0.2 | 7.2 | 4.2 |

[4] GHG emission data in this section, which use GWP values from the AR5, are based on Norway's 2023 inventory submission, version 1. All emission data in subsequent chapters are based on Norway's BR5 CTF tables, which use GWP values from the AR4 unless otherwise noted.

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

| | *GHG emissions (kt $CO_2$ eq)* | | | | | *Change (%)* | | *Share (%)* | |
|---|---|---|---|---|---|---|---|---|---|
| | *1990* | *2000* | *2010* | *2020* | *2021* | *1990–2020* | *2020–2021* | *1990* | *2021* |
| HFCs | 0.05 | 356.68 | 855.44 | 749.80 | 628.42 | 1 534 690.9 | –16.2 | 0.0 | 1.3 |
| PFCs | 3 499.84 | 1 364.08 | 214.30 | 145.15 | 222.76 | –95.9 | 53.5 | 6.9 | 0.5 |
| $SF_6$ | 2 162.97 | 918.65 | 70.60 | 75.98 | 62.48 | –96.5 | –17.8 | 4.3 | 0.1 |
| $NF_3$ | NA, NO | NA, NO | NA, NO | NO, NA | NO, NA | NA | NA | NA | NA |
| **Total GHG emissions excluding LULUCF** | 50 712.45 | 54 074.16 | 54 925.06 | 49 214.64 | 48 901.96 | –3.0 | –0.6 | 100.0 | 100.0 |
| **Total GHG emissions including LULUCF** | 40 883.89 | 35 387.53 | 31 090.79 | 30 041.96 | 33 404.67 | –26.5 | 11.2 | NA | NA |
| **Total GHG emissions excluding LULUCF, including indirect $CO_2$** | 51 305.15 | 55 070.29 | 55 232.91 | 49 497.61 | 49 158.82 | –3.5 | –0.7 | NA | NA |
| **Total GHG emissions including LULUCF, including indirect $CO_2$** | 41 476.60 | 36 383.66 | 31 398.63 | 30 324.93 | 33 661.54 | –26.9 | 11.0 | NA | NA |

*Source*: GHG emission data: Norway's 2023 inventory submission, version 1.
[a] Emissions and removals reported under the sector other (sector 6) are not included in total GHG emissions.
[b] Emissions by gas without LULUCF and including indirect $CO_2$.

17. In brief, Norway's national inventory arrangements were established in accordance with a budget proposal for 2014–2015 made by the Storting through the Ministry of Climate and Environment. The Norwegian Environment Agency was designated as a national entity through the Storting's budget proposals for 2006 and 2015, which describe the institutional arrangements (national system) and remain in force. The national system involves interaction and cooperation between three national institutions (the Norwegian Environment Agency, Statistics Norway and the Norwegian Institute of Bioeconomy Research). There have been no changes in these arrangements since the BR4.

### 2. Assessment of adherence to the reporting guidelines

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

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

#### (a) Technical assessment of the reported information

19. Norway provided in the NC8 a description of how its national system for the estimation of anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol is performing the general and specific functions defined in the annex to decision 19/CMP.1 in conjunction with decisions 3/CMP.11 and 4/CMP.11. The description includes all the elements mandated by paragraph 30 of the annex to decision 15/CMP.1. The ERT took note of the review of the changes to the national system reflected in the report on the individual review of the 2022 annual submission of Norway.

#### (b) Assessment of adherence to the reporting guidelines

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

### 4. National registry

#### (a) Technical assessment of the reported information

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

#### (b) Assessment of adherence to the reporting guidelines

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

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

### 1. Technical assessment of the reported information

23. Norway reported information on its economy-wide emission reduction target in its BR5. 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 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 Intergovernmental Panel on Climate Change sources and sectors included in the annual GHG inventory. The GWP values used are from the AR4. Emissions and removals from the LULUCF sector are included in the target using an activity-based accounting approach. Norway reported that it plans to make use of market-based mechanisms for achieving its target (see para. 55 below).

24. In its BR5 Norway reported that its emission reduction target under the Convention was operationalized through the legally binding second commitment period of the Kyoto Protocol (2013–2020). This means that Norway's commitment under the Convention will be considered fulfilled if it achieves its target for the second commitment period of the Kyoto Protocol. Norway's target under the Kyoto Protocol is to ensure that average annual GHG emissions in 2013–2020 do not exceed 84 per cent of the 1990 level. In absolute terms, taking into account its base-year emissions for the second commitment period of the Kyoto Protocol of 51,192.77 kt $CO_2$ eq, the Party's total estimated emission budget for 2013–2020, including accounting for units from market-based mechanisms and the contribution of LULUCF, is 348,914.30 kt $CO_2$ eq,[6] equivalent to average annual emissions of 43,614.29 kt $CO_2$ eq in 2013–2020.

25. In addition, Norway strengthened its climate commitments through the 2020 update to its NDC, and now aims to reduce emissions by at least 55 per cent by 2030 compared with the 1990 level. Through its Climate Change Act, in the long term, Norway is committed to transitioning to a low-emission society by 2050, which involves emission reductions of 90–95 per cent from the 1990 level. As an interim goal, the Government has set a transition target for the entire economy, whereby Norway will aim to cut emissions by 55 per cent by 2030 compared with the 1990 level. This means that the Government has set a national target to transition both the EU ETS and ESR sectors. Furthermore, the Party aims to achieve climate neutrality by 2030.

[6] Norway's report to facilitate the calculation of the assigned amount pursuant to Article 3, paras. 7–8, of the Kyoto Protocol for the second commitment period (2013–2020), available at https://unfccc.int/process/transparency-and-reporting/reporting-and-review-under-the-kyoto-protocol/second-commitment-period/initial-reports.

26. Norway aims to achieve its economy-wide target through both domestic efforts and market-based mechanisms. In its BR5 Norway stated that no units had been surrendered under its Kyoto Protocol commitment as its accounting for 2013–2020 was in the process of being finalized. However, during the review, Norway updated this information by providing its true-up period report. At the end of the commitment period, Norway's retirement account held a total of 421,856,184 Kyoto Protocol units, consisting of 412,755,682 AAUs, 738,305 emission reduction units and 8,362,197 certified emission reductions.

### 2. Assessment of adherence to the reporting guidelines

27. The ERT assessed the information reported in the BR5 of Norway and recognized that the reporting is complete and transparent, and thus adheres 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.

## D. Information on policies and measures

### 1. Technical assessment of the reported information

28. Norway provided in its NC8 and BR5 information on its PaMs[7] implemented, adopted and planned to fulfil its commitments under the Convention. Norway's set of PaMs is similar to that previously reported. Norway reported on PaMs no longer in place since its NC7, which include an arrangement for reducing emissions in the processing industry (2004 and 2009); an agreement with aluminium industries; an agreement on reducing $SF_6$ from use and production of gas-insulated switchgear; a tax on final disposal of waste; grants for biogas projects; and a discount for the pilotage readiness fee.

29. 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. The Climate Change Act provides a framework for future climate policy and for Norway meeting its emission reduction targets for 2030 and 2050. Norway's climate status and plan, which is updated annually, summarizes the Government's climate policy and is annexed to the Ministry of Climate and Environment's budget proposal for the following year. Norway provided information on changes to its institutional, legal, administrative and procedural arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of progress towards its target. While there have been no significant changes to these arrangements since the NC7, Norway presented its first climate status and plan report in October 2022 to meet a mandate to report more details on progress towards and measures for reaching the country's 2030 transition target, which includes national targets for both the EU ETS and the ESR sectors.

30. The Storting formulates and approves overarching national climate policy, which is implemented and administered by the Norwegian Government. Most climate PaMs are developed through interministerial processes before being tabled as political proposals in the Storting. The Ministry of Climate and Environment has overarching cross-sectoral responsibility for coordinating and implementing Norwegian climate policy and operates the Norwegian carbon credit procurement programme. The Ministry of Finance is responsible for tax schemes, and other ministries are responsible for policies in their sectors. Local government is responsible for implementing PaMs at the local level, including through waste management and local planning measures and some transport measures. The Norwegian Environment Agency, a government agency under the Ministry of Climate and Environment, implements the Government's pollution and nature management policy.

31. Norway reported that it strives to follow a comprehensive approach to climate change mitigation starting from policy development, addressing all sources as well as sinks, in order to address the economic and social consequences of response measures and to minimize adverse effects of PaMs on the economy. The country endeavours to incorporate the 'polluter

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

pays' principle; it also adopts a market-based approach that ensures that its environmental, economic and energy policies take externalities into account, and has a legal framework for environmental impact assessments. In addition, the country is involved in several initiatives that contribute to technology development and transfer and enhance capacity-building in developing countries with the aim of helping to maximize the positive and minimize the negative effects of response measures, including with regard to economic diversification and just transition. These activities are aimed at facilitating a shift in the energy mix, moving away from high-emission sources and towards renewable energy systems and low-emission sources, and at diversifying the economy.

32. Norway reported information on 68 PaMs, including the sectors and GHGs affected, objective and/or activity, the type of instrument, status of implementation, a brief description, start year of implementation and implementing entities. In its reporting on PaMs, Norway provided the estimated emission reduction impacts for most of its PaMs. Where estimated impacts were not provided in $CO_2$ eq, the Party provided explanations specific to individual PaMs and provided further explanations during the review as to why estimated impacts were not provided for some PaMs, noting that this was due to issues resulting from cross-sectoral contributions, limited data being available, lack of a defined baseline or methodology, and efforts to avoid duplication where estimations are covered by other policy instruments.

33. The Party described the methods used for estimating the impacts of some of its individual PaMs or groups of PaMs, including in relation to the $CO_2$ tax, policies in the petroleum sector, Enova and taxes and regulations in the road transport sector.

34. The key overarching cross-sectoral policies reported by Norway relate to taxes on GHG emissions and emissions trading, and all apply the 'polluter pays' principle. Around 85 per cent of the country's domestic emissions are subject to mandatory emissions trading, a tax on GHGs, or both. Norway introduced a national emissions trading scheme in 2005 and has been part of the EU ETS since 2009. It also participates in EU climate policy in sectors outside the EU ETS, having adopted, inter alia, the ESR and EU legislation on LULUCF. $CO_2$ taxes were introduced in 1991 as a step towards establishing a cost-effective policy to limit GHG emissions. A $CO_2$ tax is levied on most uses of mineral oils, petrol and diesel, natural gas and liquefied petroleum gas, and emissions of HFCs and PFCs are also taxed. Tax rates are determined on an annual basis. The tax base has been gradually broadened, with the addition of a tax on waste incineration in 2022. The standard tax rate for emissions in ESR sectors (covering around two thirds of those emissions) was NOK 766/t $CO_2$ in 2022, and there is broad political consensus to raise this to more than NOK 2,000/t $CO_2$ by 2030.

35. Enova, a State-owned enterprise, has been given a clearer climate profile for 2020–2024 with a view to contributing to Norway's emission reduction commitments and facilitating the transition to a low-emission society. Its rolling mandate is mainly funded by the Climate and Energy Fund, which provided NOK 4.1 billion in 2022. Enova's activities focus on late-phase technology development as well as early-stage market introduction. The technologies it supports are intended to have both immediate and long-term effects and may be disseminated and adopted outside of Norway, with potential to achieve substantial impacts on a global scale. Additional financial support for emission reduction projects is provided via the Klimasats support scheme, Innovation Norway and Nysnø Climate Investments.

36. Norway noted that it considers CCS, a key priority area for enhanced national climate action, to be a key technology for reducing global GHG emissions. The Government's CCS strategy spans research, development and demonstration activities, including large-scale projects and international work promoting CCS. Research and development is under way to make the technology economically viable. CCS projects for natural gas on the Sleipner, Gudrun and Snøhvit petroleum fields are the only CCS projects currently under way in Europe, and the only projects in the offshore industry. Norway collaborates with other countries through regional and international forums and provides funding for CCS projects abroad. During the review, Norway provided more information on developments in the full-scale Longship demonstration project, with its two capture facilities, Norcem (cement) and Celsio (waste-to-energy), and in a $CO_2$ transport and storage project called Northern Lights. The full-scale project is expected to achieve domestic emission reductions from 2025 onward, with estimated reductions of 0.4 Mt $CO_2$ eq/year from 2025 and 0.8 Mt $CO_2$ eq/year from 2027.

37. Norway explained in its NC8 that the $CO_2$ tax on petroleum activities has been the most effective instrument to date in terms of reducing emissions in the petroleum sector. The $CO_2$ tax and regulations under the Pollution Control Act have led to improvements in technology and emission-reducing measures, including in relation to the $CO_2$ storage projects at Sleipner (including Gudrun) and Snøhvit, and the replacement of gas turbines with electricity from the onshore power grid.

38. Norway has put several measures in place to reduce emissions in the transport sector. A key measure is the application of taxes for road transport, including the $CO_2$ tax levied on fuels. Norway also has a quota for biofuel use in road traffic. These PaMs have helped to shift demand towards low- and zero-emission vehicles, and Norway currently has one of the highest uptakes of zero-emission cars in the world (90 per cent of new registrations and around a quarter of the total car fleet on the roads in 2022).

39. Norway has introduced a number of PaMs to address emissions in the maritime sector. The Party sets maximum limits for $CO_2$ emissions for coastal service ferries (Bergen–Kirkenes) in public procurement and promotes the use of zero- and low-emission technologies in ferries, including through support schemes for zero-emission vessels and technologies. It also introduced a risk loan scheme for Norwegian short-sea vessels and the fishing fleet, in addition to a green shipping programme established through a public–private partnership. Key PaMs related to aviation are the $CO_2$ tax on mineral products, which applies to domestic aviation under the EU ETS, and the blending mandate for advanced jet biofuel of 0.5 per cent of aviation fuel sold in Norway, which was introduced on 1 January 2020.

40. Emissions from processes in manufacturing industries are, to a large extent, covered by the EU ETS. HFCs are regulated through a tax and reimbursement scheme, F-gas regulations and the Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer. The Party has incorporated energy requirements in the building code, the main legal instrument for improving energy efficiency, introducing stricter regulations on the installation of fossil fuel heating over time. Coverage of the ban on the use of mineral oils in heating, in force from 2020, was extended in 2022 to include temporary use for heating and drying on construction sites. For the waste sector, key PaMs include a ban on depositing biodegradable waste in landfills and requirements for the extraction of landfill gas, as well as extended producer responsibility for specific waste fractions. In general, targets set in EU waste directives, such as EU targets for preparing for reuse and recycling of municipal waste, also apply to Norway through the European Economic Area Agreement.

41. Norway reported that it has put in place a combination of regulatory, economic and information measures related to agriculture and LULUCF with a view to delivering on its emission reduction ambition. In the agriculture sector, taxation is applied to $CO_2$ emissions from fossil fuel use in activities related to agriculture, similar to measures applied in other sectors. The proposed mandatory biofuel turnover policy for non-road machinery from 2023 will also apply to agricultural machinery, whereas the general ban on fossil fuels for heating buildings will be imposed for agriculture from 2025. The LULUCF sector also has a wide range of measures in place, including in relation to legislation, taxation, economic support schemes, research extension services and administrative procedures. The Forestry Act is a key overarching measure in the LULUCF sector, and the Party has several planned sectoral mitigation actions aimed at meeting its 2030 and long-term targets. Bionova, for example, is a new funding instrument intended to help reach Norway's climate goals by contributing to GHG emission reductions and increasing soil carbon sequestration and storage, as well as creating value by facilitating the transition to a more circular bioeconomy. Other planned actions aimed at meeting 2030 targets in the LULUCF sector include afforestation, tending of juvenile stands, reducing damage from root rot, regeneration with proper tree species and actions related to the threshold for tree-stand harvesting.

42. In its NC8 and BR5, Norway highlighted several planned PaMs, including several actions in the LULUCF sector (see para. 41 above).

43. Table 5 provides a summary of the reported information on the PaMs of Norway.

Table 5
**Summary of information on policies and measures reported by Norway**

| *Sector* | *Key PaMs*[a] | *Estimated mitigation impact in 2020 (kt $CO_2$ eq)* | *Estimated mitigation impact in 2030 (kt $CO_2$ eq)* |
|---|---|---|---|
| Policy framework and cross-sectoral measures | Norwegian tax scheme on emissions of GHGs under the ESR (excluding road transport) | 1 000 | 1 000 |
| | EU ETS (2008–2012) onshore | 300 | 300 |
| | EU ETS (2013–) onshore | IE | IE |
| | Enova | 959 | 2 629 |
| | CCS | 0 | 800 |
| Energy | | | |
| Petroleum sector | Climate policies that affect the petroleum sector | 7 000 | 10 000 |
| Energy efficiency | Ban on the use of mineral oil for heating of buildings from 2020 and house construction sites from 2022 | 400 | 380 |
| Transport | Taxes and regulations on emissions from road transportation | 4 000 | 6 800 |
| IPPU | F-gas regulation and the Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer | 154 | 600 |
| Agriculture | Regional agri-environmental programme | 13 | 13 |
| LULUCF | Tending of juvenile stands | NA | 500 |
| | Threshold for tree-stand age by harvesting | NA | 300 |

*Note*: The estimated mitigation impacts are estimates of emissions of $CO_2$ eq avoided in a given year as a result of the implementation of mitigation actions.
[a] Names of PaMs reproduced as reported in Norway's BR5.

### 2. Assessment of adherence to the reporting guidelines

44. The ERT assessed the information reported in the NC8 and BR5 of Norway and identified issues relating to completeness and transparency, and thus adherence to the UNFCCC reporting guidelines on NCs and the UNFCCC reporting guidelines on BRs. The findings are described in table I.2.

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

#### (a) Technical assessment of the reported information

45. In its NC8 Norway reported that the implementation of the Kyoto Protocol is underpinned by its climate policy framework, as described in Meld. St. 21 (2011–2012). The overall responsibility for climate change policymaking lies with the Ministry of Climate and Environment, and a number of national institutions are involved in policy implementation. More detail on the arrangements in place can be found in paragraph 29 above.

46. For the second commitment period of the Kyoto Protocol, from 2013 to 2020, Norway committed to reducing its GHG emissions by 16 per cent below the base-year level (see paras. 24–26 above).

47. The Party has arrangements and enforcement procedures to meet its commitments under the Kyoto Protocol, including procedures for addressing non-compliance. These include provisions for enforcing various obligations and decisions, in accordance with the law.

48. Norway has provisions in place to make information on legislative arrangements and administrative procedures related to compliance and enforcement publicly accessible, such as the Environmental Information Act.

49. Norway has national legislative arrangements and administrative procedures in place that seek to ensure that the implementation of activities under Article 3, paragraph 3, and any elected activities under Article 3, paragraph 4, of the Kyoto Protocol also contributes to the

conservation of biodiversity and the sustainable use of natural resources. Norway's Forestry Act, in force since 2006, promotes sustainable management of forest resources, sustainable use of natural resources, the protection of biodiversity, and consideration for the landscape, outdoor recreation and cultural values associated with forests.

### (b) Assessment of adherence to the reporting guidelines

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

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

### (a) Technical assessment of the reported information

51. In the NC8 Norway reported information on how it strives to implement PaMs under Article 2 of the Kyoto Protocol in such a way as to minimize adverse effects, including the adverse effects of climate change and effects on international trade and social, environmental and economic impacts on other Parties, especially developing country Parties (see para. 31 above for more information).

52. The NC8 includes information on how Norway promotes and implements the decisions of the International Civil Aviation Organization and the International Maritime Organization to limit emissions from aviation and marine bunker fuels. Norway has a leading role in the climate negotiations under the International Maritime Organization and is working to achieve a higher level of ambition for zero-emission shipping. Green shipping is a focus area of the Government, and the Party aims to halve emissions from domestic shipping and fisheries by 2030. Norway has promoted the introduction of battery-powered electric ferries through public procurement as a climate measure. Programmes under RCN, Innovation Norway and Enova are aimed at enhancing development of more energy-efficient technologies for shipping, while pilot projects for low- and zero-emission shipping are under development as part of Green Shipping Programme public–private partnerships. For aviation, Norway supports the decision of the General Assembly of the International Civil Aviation Organization to adopt a long-term aspirational goal to reach net zero carbon emissions in international aviation by 2050 in support of the temperature goal under the Paris Agreement and the decision to develop global market-based measures and has been involved in the six-year voluntary phase of the Carbon Offsetting and Reduction Scheme for International Aviation since 2021. Norway already participates in the EU ETS for aviation.

53. Further information on how Norway strives to implement its commitments under Article 3, paragraph 14, of the Kyoto Protocol in such a way as to minimize adverse social, environmental and economic impacts on developing country Parties was reported in the 2022 NIR.

### (b) Assessment of adherence to the reporting guidelines

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

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

### 1. Technical assessment of the reported information

55. On its use of units from market-based mechanisms, Norway reported in CTF tables 4 and 4(a) that in 2019 and 2020 it used units to offset 15.0 and 10.8 per cent respectively of its total GHG emissions. Norway reported that it has used units from market-based mechanisms under the Convention. It reported in CTF tables 4 and 4(b) that it used units from market-based mechanisms in 2019 and 2020 towards achieving its 2020 target in the amount of 7,689.00 and 5,364.00 kt $CO_2$ eq respectively. The ERT noted a decrease of 30.2 per cent in the use of offset units under the Convention for 2020 compared with 2019. Table 6 shows Norway's total GHG emissions, contribution of LULUCF and use of units from market-based mechanisms towards achieving its target.

Table 6
**Summary of information on greenhouse gas emissions, use of units from market-based mechanisms and land use, land-use change and forestry by Norway**
(kt $CO_2$ eq)

| *Year* | *Emissions excluding LULUCF* | *Contribution of LULUCF* | *Use of units from market-based mechanisms* | *Net emissions including LULUCF and market-based mechanisms* |
|---|---|---|---|---|
| 1990 (base year) | 51 192.77 | NA | NA | NA |
| 2013 | 53 671.56 | –94.89 | 9 963.00 | 43 613.67 |
| 2014 | 54 040.58 | –76.42 | 10 350.00 | 43 614.16 |
| 2015 | 54 488.25 | 406.35 | 11 281.00 | 43 613.60 |
| 2016 | 53 585.78 | 55.09 | 10 027.00 | 43 613.87 |
| 2017 | 52 840.35 | 76.99 | 9 304.00 | 43 613.34 |
| 2018 | 52 871.07 | 253.61 | 9 511.00 | 43 613.68 |
| 2019 | 51 086.03 | 216.96 | 7 689.00 | 43 613.99 |
| 2020 | 49 272.55 | –294.44 | 5 364.00 | 43 614.11 |
| Cumulative 2013–2020 | 421 860.00 | 540.00 | 73 490.00 | 348 910.42 |
| | | | Emission budget 2013–2020[a] | 348 914.30 |

*Sources*: Norway's BR5 and BR5 CTF tables 1, 2(a), 4, 4(a)I, 4(a)II, 4(b) and 6(a), and information provided by the Party during the review.
[a] Corresponds to Norway's AAUs for the second commitment period of the Kyoto Protocol.

### 2. Assessment of adherence to the reporting guidelines

56. The ERT assessed the information reported in the BR5 of Norway and recognized that the reporting is complete and transparent, and thus adheres 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. Assessment of achievement of the quantified economy-wide emission reduction target

57. In assessing the Party's achievement of its 2020 target on the basis of the information reported in its BR5, the ERT noted that Norway committed to reducing its emissions to 30 per cent below the 1990 level by 2020 under the Convention (see para. 23 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 to the Kyoto Protocol (see para. 24 above). Between 2013 and 2020 the Party's total GHG emissions excluding LULUCF amounted to 421,860.00 kt $CO_2$ eq, the contribution of LULUCF amounted to 540.00 kt $CO_2$ eq and the use of market-based mechanisms amounted to 73,490.00 kt $CO_2$ eq, resulting in a net figure of 348,910.42 kt $CO_2$ eq, which equates to 100 per cent of the Party's assigned amount for the second commitment period of the Kyoto Protocol (348,914.30 kt $CO_2$ eq). The ERT concluded that, on the basis

of the information reported in the BR5 and provided during the review, the total GHG emissions excluding LULUCF of Norway including the contribution of LULUCF and use of units from market-based mechanisms do not exceed the Party's assigned amount for the second commitment period of the Kyoto Protocol, and thus that the target has been achieved. Norway's true-up period report confirms the assessment of the ERT with regard to the achievement of the 2020 target.

## F. Projections

### 1. Projections overview, methodology and results

#### (a) Technical assessment of the reported information

58. Norway reported in its BR5 and NC8 updated projections for 2030–2035 relative to actual inventory data for 2020 under the WEM scenario using GWP values from the AR4. The WEM scenario reported by Norway includes PaMs implemented and adopted until mid-2022.

59. Norway did not report data under the WAM and WOM scenarios, but WAM and WOM projections were included in one figure in the NC8 and BR5. During the review, Norway explained that these projections were included for illustrative purposes only. The WAM projections in the figure include planned PaMs and PaMs under consideration, while the WOM scenario excludes all PaMs implemented, adopted or planned after 1990. Norway provided a definition of its WEM scenario, explaining that it includes implemented policies such as $CO_2$ taxes, EU ETS implementation and funding provided through the Enova programme. In the projections under the WEM scenario, which the Party also referred to as its 'baseline scenario', implementation of current national and international climate policy is assumed to continue. The definition indicates that the WEM scenario was prepared in accordance with the UNFCCC reporting guidelines on BRs.

60. The projections are presented on a sectoral basis, using the same sectoral categories as those used in the reporting on mitigation actions, and on a gas-by-gas basis for $CO_2$, $CH_4$, $N_2O$, PFCs, HFCs and $SF_6$ (treating PFCs and HFCs collectively in each case) for 2030–2035. The projections are also provided in an aggregated format for each sector and for a Party total using GWP values from the AR4. Norway reported on factors and activities affecting emissions for most sectors.

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

61. The methodology used for the preparation of the projections is different from that used for the preparation of the emission projections for the NC7. Norway did not provide information on changes since the submission of its NC7 in the assumptions, methodologies, models and approaches used for the projection scenarios, although it did describe changes since the submission of its BR4, which include the use of revised GHG inventory data, updated future trends (e.g. for electric vehicles, the petroleum sector and the use of CCS) and a dynamic climate model for the LULUCF sector. During the review, Norway clarified that the following improvements had been made since its NC7 was submitted but were not reported on in the NC8: improving tax specifications (e.g. modelling of value added tax); providing more detail on water transport; and distinguishing more clearly between emissions covered or not covered by the EU ETS.

62. To prepare its projections, Norway relied on key underlying parameters and assumptions relating to population, number of people employed, oil and gas prices and economic development indicators (differentiating between mainland and offshore activities). The assumptions were updated on the basis of the most recent economic developments known at the time of the preparation of the projections. Between 2020 and 2030, the total population is expected to increase by 5.5 per cent, while the number of people in work may increase by as much as 7.3 per cent. GDP is projected to increase by 19.4 per cent in the same time frame, which is solely due to mainland activities; the contribution of offshore activities to GDP (petroleum production and ocean transport) will decrease. Both the population and GDP projections are lower than those contained in the NC7. Norway also used the oil and

gas prices used for the national budget as key variables for its projections, but it did not report this information as the publication of these prices was not considered appropriate. In contrast, projected oil and gas prices were reported in the NC7. For the EU ETS, Norway assumes that certificate prices will increase from an average of 2018 NOK 700 in 2022 to an average of 2018 NOK 1,000 by 2030.

63. As for the NC7, SNOW, a general equilibrium recursive-dynamic model for integrated economy and emission modelling, was the main model used to calculate energy-related and process emissions. The model has been improved since the NC7 (e.g. by adding detailed modelling for electric vehicles and the use of CCS, and improving the distinction between emissions covered or not covered by the EU ETS), and there have been changes in the historical GHG inventory and energy data (e.g. the reallocation of emissions from the petrochemical industry and in the LULUCF sector). The Party also used other sectoral models and approaches; information on emissions from the petroleum sector was provided by the Norwegian Offshore Directorate, formerly known as the Norwegian Petroleum Directorate, and is based on forecasts by oil and gas companies. Transport sector emissions were projected using an Excel model based on the Handbook of Emissions Factors. To project emissions in the agriculture and waste sectors, the Party applied the methods and models used for the GHG inventory. The projections for the LULUCF sector, which were provided by the Norwegian Institute of Bioeconomy Research, are based on the SiTree model using updated data from the national forestry inventory and the representative concentration pathway 4.5 climate scenario. Several changes in the GHG inventory, including the revision of methods for venting in the oil and gas industry and changes to the allocation of emissions from petrochemical industries, are reflected in the projections contained in the NC8.

64. Norway provided a WEM scenario projection in the form of figures and a table for nitrogen oxides, sulfur dioxide, ammonia, fine particulate matter and non-methane volatile organic compounds, which spread across borders via the atmosphere and are regulated under the Gothenburg Protocol to the Convention on Long-range Transboundary Air Pollution to Abate Acidification, Eutrophication and Ground-level Ozone.

65. Sensitivity analyses were conducted for a number of important assumptions, such as population trends, energy prices and parameters for the LULUCF sector. A lower population growth of 2 per cent between 2005 and 2030 (in line with the average population growth at EU level) would lead to around 6 per cent lower $CO_2$ emissions in 2030. A supply shock leading to a 24 per cent drop in oil and gas prices would cause $CO_2$ emissions to increase by 8 per cent by 2030 and emissions from oil and gas production to fall, while mainland emissions would increase. A theoretical international setback affecting Norwegian export prices, including by increasing oil and gas prices by 25 per cent, is estimated to reduce $CO_2$ emissions by 14 per cent in 2030. Various sensitivity analyses were performed for the LULUCF sector and show, among other things, that net $CO_2$ removals until 2050 remain fairly unaffected under national climate projections for Norway based on global scenarios used in the AR5 (representative concentration pathways 4.5 and 8.5).

### (c) Results of projections

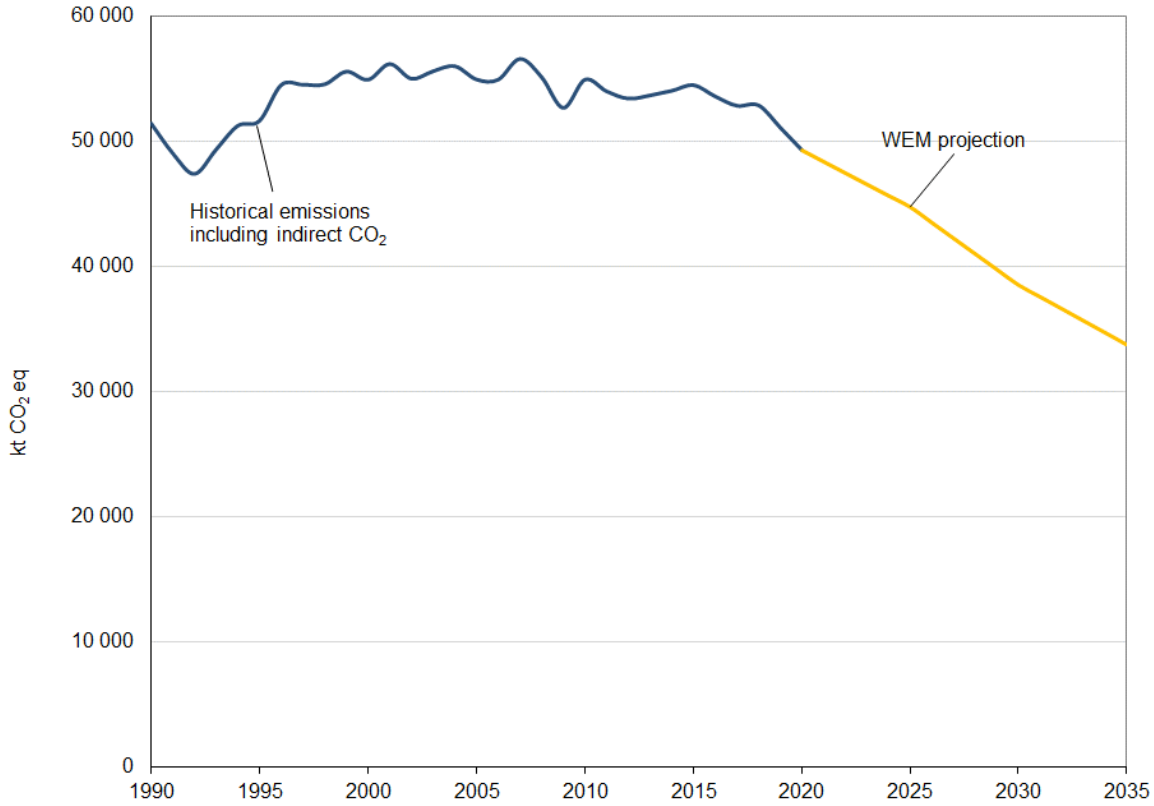
66. The projected emission levels under different scenarios are presented in table 7 and figure 1.

Table 7
**Summary of greenhouse gas emission projections for Norway**

| | *GHG emissions (kt $CO_2$ eq/year)* | *Change in relation to 1990 level (%)* | *Change in relation to 2020 level (%)* |
|---|---|---|---|
| Inventory data 1990 | 51 431.80 | NA | NA |
| Inventory data 2020 | 49 272.54 | –4.2 | NA |
| WEM projections for 2030 | 38 572.12 | –25.0 | –21.7 |
| WEM projections for 2035 | 33 830.00 | –34.2 | –31.3 |

*Sources*: Norway's NC8 and BR5 CTF table 6, which use GWP values from the AR4.
*Note*: The projections are of GHG emissions excluding LULUCF and including indirect $CO_2$.

Figure 1
**Greenhouse gas emission projections reported by Norway**




*Sources*: Norway's NC8 and BR5 CTF tables 1 and 6 (total GHG emissions), which use GWP values from the AR4.

67. Norway's total GHG emissions excluding LULUCF are projected under the WEM scenario to decrease by 25.0 and 34.2 per cent below the 1990 level in 2030 and 2035 respectively. When including LULUCF, total GHG emissions are projected under the WEM scenario to decrease by 46.1 and 50.5 per cent below the 1990 level in 2030 and 2035 respectively. This a significant improvement compared with the WEM scenario projections reported in the BR4, where total GHG emissions were projected to decrease between 1990 and 2030 by 12.1 per cent excluding LULUCF and by 40.1 per cent including LULUCF.

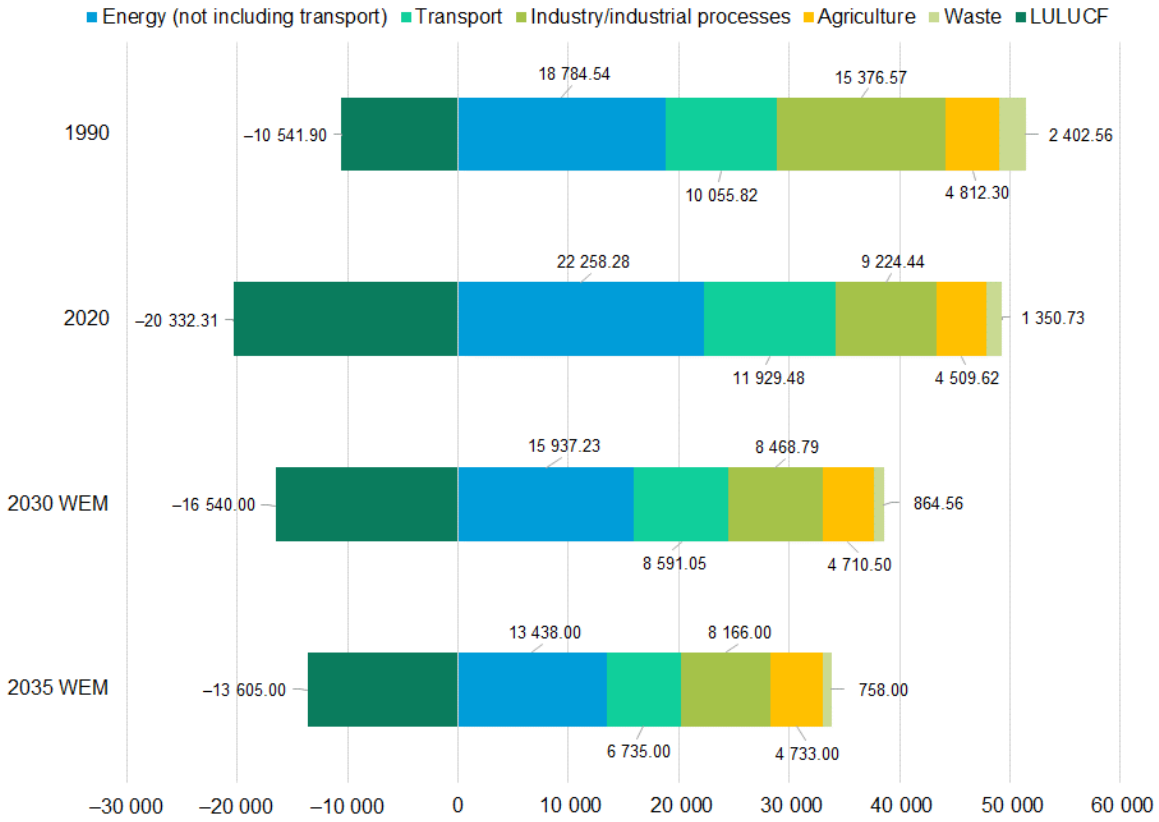
68. Norway presented the WEM scenarios by sector for 2030 and 2035, as summarized in figure 2 and table 8.

According to the projections reported for 2030 under the WEM scenario, the most significant absolute emission reductions are expected to occur in the industrial processes sector, amounting to projected reductions of 44.9 per cent between 1990 and 2030. The pattern of projected emissions reported for 2035 under the same scenario remains the

same.Figure 2

**Greenhouse gas emission projections for Norway presented by sector**

(kt $CO_2$ eq)




*Sources*: Norway's NC8 and BR5 CTF table 6, which use GWP values from the AR4.

Table 8

**Summary of greenhouse gas emission projections for Norway presented by sector**

| | *GHG emissions and removals (kt $CO_2$ eq)* | | | *Change (%)* | |
|---|---|---|---|---|---|
| *Sector* | *1990* | *2030 WEM* | *2035 WEM* | *1990–2030 WEM* | *1990–2035 WEM* |
| Energy (not including transport) | 18 784.54 | 15 937.23 | 13 438.00 | –15.2 | –28.5 |
| Transport | 10 055.82 | 8 591.05 | 6 735.00 | –14.6 | –33.0 |
| Industry/industrial processes | 15 376.57 | 8 468.79 | 8 166.00 | –44.9 | –46.9 |
| Agriculture | 4 812.30 | 4 710.50 | 4 733.00 | –2.1 | –1.6 |
| LULUCF | –10 541.90 | –16 540.00 | –13 605.00 | –56.9 | –29.1 |
| Waste | 2 402.56 | 864.56 | 758.00 | –64.0 | –68.5 |
| Other | NA | NA | NA | NA | NA |
| **Total GHG emissions excluding LULUCF** | **51 431.80** | **38 572.12** | **33 830.00** | **–25.0** | **–34.2** |

*Sources*: Norway's NC8 and BR5 CTF table 6, which use GWP values from the AR4.

69. According to the projections reported for 2030 under the WEM scenario, the most significant absolute emission reductions are expected to occur in the industrial processes sector, amounting to projected reductions of 44.9 per cent between 1990 and 2030. The pattern of projected emissions reported for 2035 under the same scenario remains the same.

70. The largest share of the reduction in industrial process emissions has already occurred as emissions are expected to fall by 11.5 per cent between 2020 and 2035. Norway did not explain this development in its NC8 or BR5. During the review, Norway clarified that the projected decrease is largely due to decreased HFC emissions.

71. Decreasing levels of GHG emissions are also projected in the energy, transport and waste sectors, with emission reductions ranging from 28.5 per cent in the energy sector to

68.5 per cent in the waste sector between 1990 and 2035. Norway noted that the electrification of oil and gas production and road transportation are major contributors to this trend. Notably, the share of electric vehicles in new vehicles had already reached 65 per cent in 2021, and projections assume that from 2025 onward, all new cars will be electric. This is a significant increase compared with the projections in the BR4, which forecast a 75 per cent share in all new vehicles by 2040. Further emission declines in the transport sector fall under domestic shipping and fisheries and are due to lower activity levels and the use of less-emission-intensive fuels and new technologies.

72. In oil and gas production, under the energy sector, electrification will be achieved by electrifying offshore rigs using cables to connect to the mainland power system. In households and businesses, emissions are projected to decrease owing to a ban on the use of mineral oil for heating purposes. Emissions from waste combustion and fossil fuel use in small-scale energy plants are projected to decrease by around 20 per cent by 2035. Since Norway's electricity supply has a very high share of renewable energy, a rise in electricity consumption would not lead to additional emissions in the energy sector. Apart from the electrification of road transport and offshore rigs, Norway also expects electricity consumption to increase in energy-intensive industries, while consumption is projected to remain stable for households and other industries.

73. The emission reductions in the energy sector are also linked to two CCS projects (one at a cement production facility and one at a waste-to-energy plant), which are expected to capture a total of 0.8 Mt $CO_2$/year by 2030.

74. In the waste sector, which accounts for the largest relative emission reduction between 1990 and 2035 in the projections, the ban on depositing wet organic waste is a reason for the projected continuing decline in landfill emissions, according to the Party. This continues the trend of significant historical reductions in the sector (a 43.8 per cent reduction between 1990 and 2020).

75. In the agriculture sector, emissions decreased by 6.3 per cent between 1990 and 2020 but are projected to increase by 4.9 per cent between 2020 and 2035. Norway did not provide an explanation for the change in trend between historical and projected emissions in its NC8 or BR5. During the review, Norway explained that the projected increase in agriculture emissions is due to the increase in demand for food as a result of its growing population and is only partially abated by PaMs in the agriculture sector. The net sink of the LULUCF sector is projected to increase by 29.1 per cent between 1990 and 2035. However, the sink peaked in 2009 owing to the age structure of the forests, and the LULUCF sink is projected to stay below the historical peak.

76. Norway presented the WEM scenarios by gas for 2030 and 2035, as summarized in table 9.

Table 9
**Summary of greenhouse gas emission projections for Norway presented by gas**

| | *GHG emissions and removals (kt $CO_2$ eq)* | | | *Change (%)* | |
|---|---|---|---|---|---|
| *Gas*[a] | *1990* | *2030 WEM* | *2035 WEM* | *1990–2030 WEM* | *1990–2035 WEM* |
| $CO_2$ | 35 096.63 | 31 293.73 | 26 805.00 | –10.8 | –23.6 |
| $CH_4$ | 6 235.95 | 4 271.24 | 4 091.00 | –31.5 | –34.4 |
| $N_2O$ | 4 105.84 | 2 395.08 | 2 391.00 | –41.7 | –41.8 |
| HFCs | 0.04 | 363.64 | 329.00 | 909 000.0 | 822 400.0 |
| PFCs | 3 894.80 | 174.57 | 173.00 | –95.5 | –95.6 |
| $SF_6$ | 2 098.54 | 73.86 | 42.00 | –96.5 | –98.0 |
| $NF_3$ | NA | NA | NA | NA | NA |
| **Total GHG emissions without LULUCF** | **51 431.80** | **38 572.12** | **33 830.00** | **–25.0** | **–34.2** |

*Sources*: Norway's NC8 and BR5 CTF table 6, which use GWP values from the AR4.
[a] Norway included indirect $CO_2$ emissions in its projections.

### (d) Assessment of adherence to the reporting guidelines

77. The ERT assessed the information reported in the NC8 and BR5 of Norway and identified issues relating to completeness, and thus adherence to the UNFCCC reporting guidelines on NCs and the UNFCCC reporting guidelines on BRs. The findings are described in tables I.3 and II.1.

## 2. Assessment of the total effect of policies and measures

### (a) Technical assessment of the reported information

78. In its NC8 Norway presented the estimated and expected total effect of implemented and adopted PaMs. Information is presented in terms of GHG emissions avoided or sequestered, by gas (on a $CO_2$ eq basis), in 2020, 2025, 2030 and 2035.

79. Norway reported that the total estimated effect of its implemented and adopted PaMs is 24,293.9 kt $CO_2$ eq in 2020, 33,162.2 kt $CO_2$ eq in 2025, 34,949.7 kt $CO_2$ eq in 2030 and 34,801.2 kt $CO_2$ eq in 2035. According to the information reported in its NC8, PaMs implemented in the energy sector will deliver the largest emission reductions by 2030. As oil and gas production is projected to decrease, the total effect of PaMs in the energy sector is also expected to lessen over time; by 2035 PaMs implemented in the industry sector will deliver the largest emission reductions, followed by PaMs in the transport sector. Cross-sectoral PaMs (including CCS)[8] are also projected to have substantial mitigation effects. Norway reported the overall effect of planned PaMs but did not provide the total estimated effect of PaMs by sector or gas; the additional estimated effect of its planned PaMs (including PaMs under consideration) is about 1,800 kt $CO_2$ eq in 2025 and 4,100 kt $CO_2$ eq in 2030. Table 10 provides an overview of the total effect of PaMs as reported by Norway.

Table 10
**Projected effects of Norway's planned, implemented and adopted policies and measures in 2030 and 2035**
(kt $CO_2$ eq)

| | *2030* | | *2035* | |
|---|---|---|---|---|
| *Sector* | *Effect of implemented and adopted measures* | *Effect of planned measures* | *Effect of implemented and adopted measures* | *Effect of planned measures* |
| Cross-sectoral (including CCS) | 4 728.8 | NA | 4 762.3 | NE |
| Energy (without transport) | 10 754.0 | NA | 8 688.0 | NE |
| Transport | 7 573.0 | NA | 9 324.0 | NE |
| Industry/industrial processes | 10 652.0 | NA | 10 652.0 | NE |
| Agriculture | 18.9 | NA | 20.9 | NE |
| Land-use change and forestry | 430.0 | NA | 498.0 | NE |
| Waste management | 793.0 | NA | 856.0 | NE |
| **Total** | **34 949.7** | **4 100.0** | **34 801.2** | **NE** |

*Source*: Norway's NC8, which uses GWP values from the AR4.
*Note*: The total effect of implemented and adopted PaMs is defined as the aggregate of the estimated effects of each significant policy or measure; the total effect of planned PaMs is defined as the aggregated effect of proposed PaMs and PaMs under consideration.

### (b) Assessment of adherence to the reporting guidelines

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

[8] The ERT treats CCS as cross-sectoral as both industrial and waste-to-energy plants are affected.

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

#### (a) Technical assessment of the reported information

81. In the NC8 Norway provided information on how its use of the mechanisms under Articles 6, 12 and 17 of the Kyoto Protocol is supplemental to domestic action. In 2013–2020, the Party used 73.49 million units from the Kyoto Protocol mechanisms. The Party used AAUs that reflect net transfers received by Norway under the EU ETS from the EU and certified emission reductions acquired through a procurement programme. In addition, it used some 9 million Kyoto Protocol units that were carried over from the first commitment period.

#### (b) Assessment of adherence to the reporting guidelines

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

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

### 1. Technical assessment of the reported information

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

83. In its NC8 and BR5 Norway reported information on its provision of financial, technological and capacity-building support to non-Annex I Parties.

84. Norway has provided support that it considers to be “new and additional”. Its definition of “new and additional”, in the absence of an internationally agreed definition, is based on additionality to the international development aid goal of 0.7 per cent of gross national income. Norway’s process for determining resources to be “new and additional” is based on Norwegian ODA exceeding 0.7 per cent of gross national income for a number of successive years and remaining at around 1 per cent of gross national income. The Norwegian ODA budget has steadily increased as the country’s economy continues to grow.

85. Norway reported on the support that it has provided to non-Annex I Parties, distinguishing between support for mitigation, adaptation and cross-cutting activities and identifying the capacity-building elements of such support. The Party explained that its monitoring of development finance targeting the objectives of the UNFCCC is based on the OECD DAC reporting system, and tracking is separated into earmarked contributions and imputed multilateral core contributions. Most of Norway’s support comes from earmarked support, including bilateral contributions and earmarked contributions through multilateral institutions.

86. To track earmarked contributions, Norway uses the OECD DAC Rio markers for climate change mitigation and adaptation. The markers are used to estimate the proportion of development finance targeting climate-related objectives through a scoring system that assesses whether financial contributions target climate change, and if so, whether the climate objectives of those contributions are ‘principal’ or ‘significant’. Contributions to activities targeting climate change as a principal objective are reported as 100 per cent climate finance. For major donors, including Norway, 40 per cent of financial support provided to activities with a significant climate change objective is reported as climate finance. Contributions to cross-cutting activities are reported as 40 per cent climate finance if neither adaptation nor mitigation are principal project objectives.

87. The estimates of climate-specific core contributions made by Norway to multilateral institutions are calculated by OECD, using a methodology that involves imputing multilateral aid outflows targeting climate objectives back to specific donors of multilateral core contributions. The process has two steps: the percentage of each multilateral agency’s total annual commitments to climate objectives, including only grants or concessional (ODA)

loans from core resources, is calculated; this percentage is then applied to each donor's core contributions in the same year. These contributions are reported as "other" because they are not disaggregated by type of support (adaptation, mitigation and cross-cutting). During the review, Norway explained that in future reports, these climate-specific core contributions to multilateral institutions will be disaggregated by type of support. Norway includes them as climate-specific estimates because they only include the climate-specific share of core contributions. Although the calculations are not carried out for all multilateral institutions – only around 20 in total – this covers around 90 per cent of contributor countries' multilateral core contributions.

88. Norway's national approach to tracking the provision of financial support, including with regard to indicators, delivery mechanisms and allocation channels tracked, is also based on the OECD DAC Rio markers. Norway did not report information on its national approach to tracking the provision of technology and capacity-building support. During the review, Norway clarified that since it does not have an established method for comprehensively tracking activities that promote technology transfer and capacity-building, information on the most relevant activities was included in textual format and in qualitative tables. The Party also explained that it is currently involved in OECD DAC WP-STAT with a view to developing a method for tracking activities relevant to capacity-building and technology transfer, which can also be used for more precise and transparent reporting to the UNFCCC. There have been no changes in Norway's national approach to tracking the provision of support since its previous NC. However, during the review, Norway provided additional information on quality assurance checks carried out at the national level on the information to be reported using the OECD DAC reporting system, including how significant differentials in the reported information from one year to another are accounted for.

89. Norway's methodology and underlying assumptions used for collecting and reporting information on financial support, including underlying assumptions and indicators, are based on OECD methodologies. Norway uses and reports the OECD DAC purpose codes for sector classifications. During the review Norway explained that the OECD DAC purpose codes and UNFCCC sector codes are currently being mapped; in future reports, it intends to use the UNFCCC codes for reporting, which will make its reports more comparable with those of other Parties. Norwegian development climate finance includes climate-related ODA and other official flows. The activities under other financial flows are interventions by Norfund that provide equity, loans and guarantees to companies. Norfund's outflows are reported as other official flows to avoid double counting, because the funding that Norfund receives through the state budget is reported as ODA. The amounts reported are gross disbursements during the year reported for; inflows are not reported as negative disbursements.

90. Norway's private finance mobilized by public interventions is estimated on the basis of the OECD DAC statistical framework. OECD DAC has been developing an international standard for measuring resources mobilized from the private sector through official development finance interventions, with different methodologies for different financial instruments, and data collection at the activity level. 'Mobilization', in this framework, refers to the direct mobilization effect of ODA. The methodologies account for the flexibility needed in terms of data availability, while striving to be conservative in terms of causality. Norway considers this framework to be consistent with the outcome agreed at the twenty-fourth session of the Conference of the Parties regarding modalities for the accounting of financial resources mobilized through public interventions. Norway explained during the review that the mobilized private finance reported is finance committed, whereas public finance provided is reported as climate finance disbursed, owing to difficulties in tracking disbursements of private finance mobilized.

### (b) Financial resources

91. Norway reported in its NC8 and BR5 information on its provision of financial support to non-Annex I Parties as required under the Convention, including on financial support provided and disbursed, allocation channels and annual contributions. Norway's support strategy is guided by different support areas, which include bilateral partnerships; multilateral support; specific initiatives targeting different sectors, such as NICFI; and support for renewable energy and climate change adaptation. During the review, Norway clarified that

climate finance is allocated on the basis of priority areas, including reducing emissions from deforestation and forest degradation, renewable energy, and climate change adaptation, including risk reduction.

92. Norway did not report in its NC8 or BR5 how it seeks to ensure that the financial resources it provides to non-Annex I Parties effectively address their adaptation and mitigation needs. However, during the review, Norway clarified that all Norwegian ODA, including climate finance provided to support non-Annex I Parties, is demand-driven, and therefore addresses the needs and priorities of partner countries. According to the guidance for the preparation and approval of Norwegian support, any project or programme should be assessed in terms of its relevance to the priorities and plans of the recipient country and/or partner, or its relevance to the target group. This is aimed at ensuring that resources effectively address the needs of Parties.

93. Table 11 summarizes the information reported by Norway on its provision of financial support.

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

| *Allocation channel of public financial support* | *Disbursement in 2019–2020* |
|---|---|
| ODA | 8 493.52 |
| Climate-specific contributions through multilateral channels, including: | 368.56 |
| Global Environment Facility | 23.88 |
| Adaptation Fund | 15.54 |
| Green Climate Fund | 149.29 |
| Other multinational climate change funds | 6.74 |
| Financial institutions, including regional development banks | 158.18 |
| United Nations bodies | 14.94 |
| Climate-specific contributions through bilateral, regional and other channels | 1 071.58 |

*Sources*: Norway's BR5 CTF tables and Query Wizard for International Development Statistics, available at http://stats.oecd.org/qwids/.

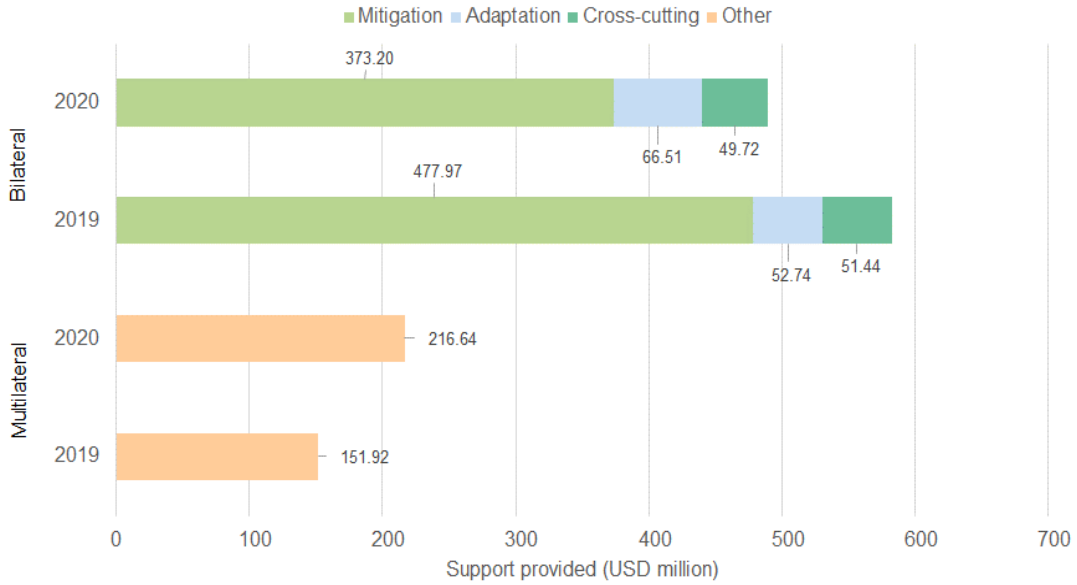
94. Norway's climate-specific public financial support[9] totalled USD 1,440.14 million in 2019–2020, representing a decrease of 8.0 per cent since the BR4 (2017–2018).[10] However, when considered in the local currency, Norway's climate-specific public financial support increased between 2019–2020 and 2017–2018, from NOK 12,819 million to NOK 13,105 million, or by 2.23 per cent. This shows that the apparent decrease in climate-specific public financial support for 2019–2020 when the amounts are expressed in United States dollars is due to changes in the exchange rate between the Norwegian krone and the United States dollar.

95. Norway contributed through multilateral channels USD 368.56 million in 2019–2020. The contributions were made to specialized multilateral climate change funds, such as the Global Environment Facility, the Adaptation Fund, the Green Climate Fund, the Global Green Growth Institute and the Multilateral Fund for the Implementation of the Montreal Protocol. Contributions were also made to multilateral financial institutions, including regional development banks, and to specialist United Nations bodies. The main channel for Norwegian multilateral climate finance is the Green Climate Fund. Norway continued to report a contribution to the Adaptation Fund, as it did for the BR4; but the BR5, unlike the BR4, does not report any contributions to the Strategic Climate Fund for 2019–2020. Information on financial support from the public sector provided through multilateral and bilateral channels and the allocation of that support by target area is presented in figure 3 and table 12.

[9] For the remainder of this chapter, the term "financial support" means climate-specific financial support, unless otherwise noted.

[10] Comparisons with data from previous years have been calculated directly without adjusting for inflation.

Figure 3
**Provision of support by Norway in 2019–2020**




*Sources*: Norway's BR5 CTF tables 7, 7(a) and 7(b).

Table 12
**Summary of information on channels of financial support reported by Norway**
(Millions of United States dollars)

| *Allocation channel of public financial support* | *Amount disbursed in 2019–2020* | *Amount disbursed in 2017–2018* | *Change (%)*[a] | *Share of total (2019–2020) (%)* |
|---|---|---|---|---|
| Detailed information by type of channel | | | | |
| Multilateral channels | | | | |
| Mitigation | 0.00 | 0.00 | – | – |
| Adaptation | 0.00 | 0.00 | – | – |
| Cross-cutting | 0.00 | 0.00 | – | – |
| Other | 368.56 | 263.19 | 40.0 | 100.0 |
| **Total multilateral** | **368.56** | **263.19** | **40.0** | **100.0** |
| Bilateral channels | | | | |
| Mitigation | 851.17 | 1 104.50 | –22.9 | 79.4 |
| Adaptation | 119.25 | 102.19 | 16.7 | 11.1 |
| Cross-cutting | 101.16 | 95.85 | 5.5 | 9.4 |
| Other | 0.00 | 0.00 | – | – |
| **Total bilateral** | **1 071.58** | **1 302.54** | **–17.7** | **100.0** |
| **Total multilateral and bilateral** | **1 440.14** | **1 565.73** | **–8.0** | **100.0** |

*Sources*: Norway's BR5 CTF tables 7, 7(a) and 7(b), and the report on the technical review of the BR4 of Norway for 2017–2018 data.

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

96. The Party reported detailed information on the total financial support provided though bilateral (USD 1,071.58 million) channels in 2019–2020. During the reporting period, Norway placed a particular focus on the least developed countries, highlighting the support provided to countries like Ethiopia, Malawi and the United Republic of Tanzania, which focused on key sectors such as agriculture and forestry, with objectives in areas including adaptation, improving livelihoods, food security and nutrition, land rehabilitation and conservation. NICFI, in contrast, focused on reducing GHG emissions from deforestation and forest degradation in developing countries (REDD+), rather than on the least developed countries. Through NICFI, Norway disbursed NOK 31 billion in 2008–2020, and NOK 3.05

billion in 2020. The Party has committed to allocating NOK 3 billion/year to paying for verified emission reductions in partner countries. NICFI involves bilateral partnerships, including with the Amazon Fund; multilateral collaboration through the United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries, and the Readiness Fund of the World Bank's Forest Carbon Partnership Facility; and the promotion of partnerships and civil society and private sector participation.

97. The NC8 and the BR5 provide information on the types, sectors and instruments of support provided. The information reported shows that in 2019–2020 the average shares of bilateral and regional financial support allocated to mitigation, adaptation and cross-cutting projects were 79.4, 11.1 and 9.4 per cent respectively. In 2019–2020, the majority of financial contributions through bilateral and regional channels were allocated to the energy sector, including energy policy and energy generation using renewable sources, and to the agriculture, and water and sanitation sectors, as well as to general environmental protection and government and civil society. The ERT noted that the grants provided in 2019–2020 accounted for almost all of the bilateral and regional financial support. Norway did not report detailed information on how the support provided assists developing country Parties that are particularly vulnerable to the adverse effects of climate change to meet adaptation costs. During the review, Norway explained that this is partly achieved by responding to those countries' needs. Moreover, a large portion of the climate finance provided for adaptation is channelled through multilateral funds, and the task of meeting the costs of adaptation is delegated to those funds. Norway has developed a climate change adaptation strategy and will therefore be able to provide more details on its strategy for meeting adaptation costs in future reporting.

98. Norway explained that private finance is mobilized through interventions financed by its public climate financing. Private finance mobilized by Norway's public interventions amounted to USD 16 million (NOK 145 million) in 2019 and USD 33 million (NOK 313 million) in 2020. It also reported on how it uses public funds to promote private sector financial support for developing countries to increase mitigation and adaptation efforts in developing countries by directing climate finance efforts towards supporting private sector and commercial investments, often in cooperation with other contributors or through programmes or funds of multilateral development institutions. Norway explained that Norfund remains the Norwegian Government's most important tool for strengthening businesses that create jobs and reduce poverty in developing countries, using a risk-sharing strategy that establishes viable, profitable activities that would not otherwise be initiated because of the high risk involved. This risk-sharing can enable investors to realize more projects or enter markets, thereby increasing the impact of Norfund's capital.

99. Beyond Norfund, other examples of Norway's support to the private sector and to private finance mobilization include the &Green fund and the Enterprise Development for Jobs scheme. &Green was established in 2017 to promote deforestation-free business models by absorbing private sector risks and encouraging individual jurisdictions in developing countries to raise their standards to qualify for &Green financing. Norway has disbursed a total of NOK 500 million to the fund. Enterprise Development for Jobs, which is managed by Norad, provides project development support and guarantee subsidies for renewable energy projects. In 2019 and 2020, the scheme contributed to developing projects towards financial close, including one project in Pakistan and another on the border shared by Rwanda and the Democratic Republic of the Congo.

### (c) Technology development and transfer

100. Norway reported on its measures and activities related to technology transfer, access and deployment benefiting developing countries, including activities undertaken by the public and private sector. Examples of support provided for the deployment and enhancement of the endogenous capacities and technologies of non-Annex I Parties include support provided by Norway, in the order of USD 100 million between 2016 and 2020, to protect the rights of Indigenous Peoples and forest-dependent communities with regard to managing tropical forests. This included support for Indigenous communities and a training programme on territorial management approaches based on traditional knowledge in Colombia; land

titling in Peru; payment for Indigenous Peoples' and forest-dependent communities' forest management through Ecuador's Socio Bosque programme; and a programme providing direct support to Indigenous Peoples in Brazil, supporting territorial management, the establishment of funds managed by Indigenous Peoples and intergenerational transfer of knowledge.

101. Norway focused the provision of its technology transfer support on the energy sector, including for renewable energy, energy access and energy efficiency, and on the agriculture and food security sectors. The NC8 highlights a focus on digital technology and new means of communication. Much of the support focused on the private sector, particularly for energy-related support. Norway has provided support to the Climate Technology Centre and Network and the Clean Energy Ministerial. Some of the initiatives reported in CTF table 8 include both Annex I and non-Annex I countries as recipients.

102. Since its NC7 and BR4 Norway has not implemented or developed plans to implement any additional measures and activities. Norway did not consistently describe success and failure stories in relation to technology transfer, including in the relevant tables; the ERT noted that such information, particularly on successes, was scattered throughout the report. During the review, Norway explained that it faced challenges in including such stories in its reporting, but stressed that successes and failures exist and are important for measuring outcomes. Norway recognizes the importance of developing a systematic way of structuring the information reported in relation to its ODA and is striving to adopt a more structured approach to its reporting in this area.

#### (d) Capacity-building

103. Norway reported on its capacity-building support for mitigation, adaptation and technology that responds to the existing and emerging needs identified by non-Annex I Parties. It described individual measures and activities related to capacity-building support in textual and tabular format. Norway described how the activities supported respond to the existing and emerging capacity-building needs and priorities of non-Annex I Parties, explaining that its approach, which is based on official guidance for preparing and approving Norwegian support, involves an assessment of the relevance of the project or programme to the recipient country and/or the priorities and plans of the partner, or, if the partner is not an authority of the recipient country, an assessment of the project's relevance to the target group.

104. Norway has supported climate-related capacity development activities relating to both adaptation and mitigation, with a strong focus on REDD+, energy and agriculture. Since the BR4 the focus of support has remained the same. Norway's support has responded to the existing and emerging capacity-building needs of non-Annex I Parties by following the principles of country-driven demand.

### 2. Assessment of adherence to the reporting guidelines

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

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

#### (a) Technical assessment of the reported information

106. In its NC8 Norway reported its activities, actions and programmes undertaken in fulfilment of its commitments under Article 10 of the Kyoto Protocol. Norway provided information on steps taken to promote, facilitate and finance the transfer of technology to developing countries and to build their capacity in order to facilitate implementation of Article 10 of the Kyoto Protocol (see paras. 83–105 above for more detail).

107. Norway provided information on its implementation of Article 11 of the Kyoto Protocol, including an explanation of how it took into account the need for adequacy and

predictability, and a description of how its contributions are "new and additional" (see para. 84 above).

108. Norway reported on its financial contributions to the Adaptation Fund, which consisted of USD 15.54 million in 2019–2020.

### (b) Assessment of adherence to the reporting guidelines

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

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

### 1. Technical assessment of the reported information

110. In its NC8 Norway provided information on the expected impacts of climate change in the country; the adaptation policies covering regional, sectoral and cross-sectoral vulnerabilities and considerations; and an outline of the action taken to implement Article 4, paragraph 1(b) and (e), of the Convention with regard to adaptation. Norway provided a description of climate change vulnerability and impacts for both the mainland and Arctic regions (Svalbard area) and highlighted the adaptation response actions taken and planned at different levels of government.

111. The projections for Norway's climate indicate that warming will occur in all parts of the country and affect all seasons. Svalbard is currently experiencing one of the fastest rates of warming in the world. Annual precipitation over the mainland and Svalbard is projected to rise, along with annual run-off, and Svalbard is expected to have a shorter snow season. Most of Norway is likely to experience sea level rise, except for the coast of Svalbard, where the relative sea level is projected to fall owing to continued loss of local ice masses.

112. Norway has addressed adaptation matters through the publication of Official Norwegian Reports, which provide further direction to government agencies on enhancing preparedness for climate change. For example, following the publication of a white paper on climate change adaptation in Norway, the central Government established climate change adaptation planning guidelines in 2018 and released an online tool in 2019 to help municipalities and counties to integrate adaptation efforts into their planning activities. In addition, an assessment report entitled *Climate risk and the Norwegian economy* emphasizes the importance of integrating climate risk into decision-making across sectors, including through more extensive use of scenario analysis and by enhancing market awareness of the connection between prevention measures and lowered risk of damage.

113. Norway has adopted a white paper on Arctic policy (*People, opportunities, and Norwegian interests in the Arctic*), which emphasizes that the severity of climate change impacts in northern Norway will depend on society's capacity to adapt. The white paper outlines current and future adaptation measures, and highlights emission reduction and integrated strategies. During the review, the Party clarified that the white paper primarily focuses on mainland Norway, including areas with a subarctic climate in its northern regions, while policies regarding Svalbard in the Arctic region are detailed in a separate white paper, which is being updated.

114. During the review, Norway provided additional information on a recent white paper entitled *A Changing Climate – United for a Climate-Resilient Society*, which was adopted in 2023. It covers climate change and its consequences for nature and society, the management system for climate change adaptation, and the establishment of a plan for national work on adaptation for 2024–2028. Table 13 summarizes the information on vulnerability and adaptation to climate change presented in the NC8 of Norway.

Table 13
**Summary of information on vulnerability and adaptation to climate change reported by Norway**

| *Vulnerable area* | *Examples/comments/adaptation measures reported* |
|---|---|
| Environment, nature and ecosystems | Vulnerability: A total of 211 endangered species are vulnerable to climate change; some cultural landscape systems are vulnerable to increased production; wetland areas in southern and eastern Norway will be threatened by higher temperatures and lower precipitation levels in summer; invasion of harmful alien species; migration of fish and aquatic organisms owing to changes in freshwater habitats brought on by climate change (this may, however, be prevented by human-made barriers); and higher temperatures and $CO_2$ content in seawater will lead to ocean acidification and threaten the marine ecosystem. |
| | Adaptation: Ecosystem-based management systems safeguard ecosystem structure and function; integrated marine management plans ensure environmental protection and foster coordination of commercial activities; ecosystem-based fresh water management is governed by Norwegian water regulations; new national guidance integrates climate change into river basin management plans using projections from the Norwegian Centre for Climate Services; wetlands are protected and are being restored; climate change adaptation is mandatory in planning measures for Norwegian World Heritage Sites; a regulatory framework enhances control over invasive alien species; guidance on climate change adaptation and nature management is available online for municipal planning at the local and regional level; and central government planning guidelines promote nature-based solutions for climate change adaptation. Other ongoing initiatives include updating the climate change adaptation strategy in this area and adjusting protected areas. |
| Infrastructure and buildings | Vulnerability: The maintenance backlog in the transport sector will worsen with the effects of climate change; hydropower structures may face challenges during extreme floods; rising sea levels, storm surges and coastal erosion threaten coastal settlements and cultural heritage; and increased moisture and mould growth in buildings poses health risks and reduces infiltration capacity during droughts and milder winters. |
| | Adaptation: Natural hazard management in the transportation sector is enhanced through research, risk assessments and updates to guidelines; the Norwegian Water Resources and Energy Directorate conducts research on the challenges facing the energy sector in relation to climate change and mandates electricity utility companies to prepare for climate change risks through licensing and inspections; the Directorate for Cultural Heritage conducts research with a view to developing guidelines for risk and vulnerability analysis and adapting cultural heritage sites to the effects of climate change, in addition to securing funding for vulnerable archaeological sites; and the Planning and Building Act requires planning authorities to ensure that risk and vulnerability analyses are conducted. |
| Water and wastewater systems | Vulnerability: Many water treatment plants near rivers and coastal areas will risk disruption from floods, landslides, rising sea levels and storm surges; heavy rain strains stormwater systems, increasing the risk of drinking water contamination; higher temperatures, combined with more precipitation and run-off, degrade raw water quality; and intense rainfall overwhelms sewers, leading to untreated wastewater discharge, contaminating beaches and drinking water, causing floods and infrastructure damage and introducing health risks. |
| | Adaptation: Legislation addresses stormwater management (Planning and Building Act and the Pollution Control Act); the Norwegian Centre for Climate Services defines climate change allowances (basis for the design of protection measures for existing infrastructure and buildings) to cope with heavy rainfall and floods; protective measures for infrastructure in flood-prone areas are considered in land-use planning; guidelines have been established for floods in small rivers, and for mapping and protecting against landslides and avalanches; research and development on the effects of climate change on hydrology and natural disasters; information on tides, sea levels and reference levels for planning purposes, along with information on their application, is accessible through a dedicated web page; and a free web tool is available for inundation mapping, including data and maps. |
| The Norwegian Arctic | Vulnerability: The changing cryosphere in the Arctic disrupts ecosystems and alters carbon cycling, affecting species across terrestrial, coastal and marine environments; rising temperatures displace Arctic species northward; retreating sea ice allows southern species to migrate into Arctic waters, challenging native species and increasing access to |

| *Vulnerable area* | *Examples/comments/adaptation measures reported* |
|---|---|
| | marine and coastal waters, potentially leading to overexploitation and environmental risks; climate change poses significant risks to safety, health and infrastructure in the Arctic, impacting sectors like fisheries, tourism and research; coastal communities and Indigenous livelihoods are particularly vulnerable; and rising temperatures and precipitation levels affect cultural heritage and infrastructure integrity, intensified by permafrost thaw in Svalbard.<br><br>Adaptation: Regulations within and outside of protected areas in Svalbard have been adapted to address climate change and increased traffic; measures include compulsory pilotage and improved charting of waters, and adherence to international strategies for management of invasive species and marine environment protection; extensive research and monitoring, facilitated by programmes like the Climate-Ecological Observatory for Arctic Tundra and environmental monitoring, provides insights into climate impacts; revised land-use planning guidelines consider climate change, with the Norwegian Water Resources and Energy Directorate supporting local authorities in flood and landslide management; integrated management plans for Arctic seas are regularly updated with a view to enabling adaptation to environmental changes; efforts to preserve cultural heritage include documenting and monitoring erosion; and ship traffic surveillance is bolstered through satellite-based automatic identification systems and additional shore-based receivers around the Svalbard archipelago. |

115. Norway provided a detailed description of international adaptation activities, including support provided through multilateral institutions, such as the United Nations Office for Disaster Risk Reduction, the Global Facility for Disaster Reduction and Recovery, the International Centre for Integrated Mountain Development and the Global Framework for Climate Services. Norway also provided information on bilateral cooperation with developing countries on adaptation, such as its support for Ethiopia in sponsoring MSc and PhD students whose work involves watershed management, agroforestry, climate smart agriculture, renewable energy sources, and crop and livestock production. Norway also supported the Malawian Government, civil society organizations and educational institutions in addressing climate change adaptation in agriculture, food security and the environment.

### 2. Assessment of adherence to the reporting guidelines

116. The ERT assessed the information reported in the NC8 of Norway and identified an issue relating to transparency, and thus adherence to the UNFCCC reporting guidelines on NCs. The finding is described in table I.5.

## I. Research and systematic observation

### 1. Technical assessment of the reported information

117. In its NC8 Norway provided information on its general policy and funding relating to research, referring to a white paper on the long-term plan for research and higher education (2023–2032), and both domestic and international activities, including contributions to the World Climate Programme, the International Geosphere–Biosphere Programme, the Global Climate Observing System and the Intergovernmental Panel on Climate Change. Norway also provided information on the identification of opportunities for and barriers to free and open international exchange of data and information and on action taken to overcome such barriers.

118. Norway has implemented international and domestic policies and programmes on climate change research, systematic observation and climate modelling that aim to advance capabilities to predict and observe the physical, chemical, biological and human components of the Earth's system over space and time.

119. The Government's public funding target for research and innovation stands at 1 per cent of GDP, in line with that of the EU, and has been met since 2016. In 2020, public funding for research and innovation reached 1.16 per cent of GDP. Climate research funding is delivered through RCN, research institutions, industry and EU framework programmes. In 2021, the climate research portfolio of RCN, with funding from RCN and the EU programmes, was NOK 876 million, with a further NOK 2 billion for the energy and low-

emissions portfolio. Norway's National Financing Initiative for Research Infrastructure provides researchers with the equipment they need to perform high-quality science and efficiently deliver high-level research. Since the first call in 2009, the initiative has allocated NOK 7.6 billion to new infrastructure, including climate-relevant infrastructure.

120. KLIMAFORSK is the most important funding instrument for climate research under RCN. Its three broad research fields are natural and anthropogenic climate change, impacts of climate change on nature and society, and transition to a low-emission society and adaptation to climate change. In the energy sector, the ENERGIX programme and the Centres for Environment-friendly Energy Research provide funding for research on renewable energy, energy efficiency, energy systems and policies. The CLIMIT programme is aimed at accelerating the commercialization of CCS, focusing on the decarbonization of industry and energy resources, large-scale $CO_2$ storage sites on the Norwegian continental shelf and the development of innovative technologies and solutions for CCS. Other key examples of Norway's research programmes include POLARPROG, a polar research programme which is the most important funding instrument for achieving wide-ranging, high-quality Norwegian polar research; MARINFORSK, which focuses on oceans and ocean-related areas; and SIRKULÆRØKONOMI, a circular economy research programme aimed at ensuring that RCN targets the circular economy in a holistic manner.

121. In the context of international cooperation, Norway takes an active part in the European Strategy Forum on Research Infrastructures and hosts the European $CO_2$ Capture and Storage Laboratory Infrastructure project, the Argo drifting buoy of the European Strategy Forum on Research Infrastructure, the Integrated Carbon Observation System, the Aerosol, Clouds and Trace Gases Research Infrastructure, and the Svalbard Integrated Arctic Earth Observing System. Furthermore, the National Financing Initiative for Research Infrastructure is funding the Climate-Ecological Observatory for Arctic Tundra, which monitors long-term effects of climate change on land areas in north-east Norway and Svalbard, and an upgrade of the Norwegian Earth System Model. RCN has several activities involving North–South research cooperation, including NORGLOBAL-2, which stimulates innovative, high-quality research in support of global efforts towards the United Nations SDGs.

122. In terms of activities related to systematic observation, Norway reported on national plans, programmes and support for ground- and space-based climate observing systems, including satellite and non-satellite climate observation. Norway also reported on challenges related to the maintenance of a consistent and comprehensive observation system.

123. The Norwegian Environment Agency is responsible for the management and funding of a number of environmental monitoring programmes, including for monitoring GHGs, ozone layer thickness, ultraviolet radiation levels, aerosols and other air pollutants. Other programmes, on coastal monitoring of flora and fauna, ocean acidification and terrestrial observations, for example, are assigned to research institutions and, in some cases, combined with observations in the context of EU-wide research infrastructure and monitoring obligations or other international networks (e.g. the Advanced Global Atmospheric Gases Experiment).

124. Key systematic observation programmes and activities include those of the Norwegian Meteorological Institute, which are related to climatological information for monitoring and planning purposes that is used as input for formulating national climate policies and as part of data exchanges at the global (World Meteorological Organization) and European (European Climate Assessment & Dataset under the European Meteorological Services Network) level, and within the framework of the national meteorological services of the Nordic countries. On oceanographic observations, the Institute of Marine Research has an extensive monitoring programme on physical and biological oceanographic parameters. On the cryosphere, Norway has also developed national programmes that contribute to global systems and data management, such as long-term monitoring programmes for several glaciers on the mainland and in Svalbard, and permafrost monitoring programmes. Norway participates in Copernicus, including its climate change service, and its CryoClim project has developed a new service for long-term climate monitoring by satellite. Norway also takes part in several space observation programmes, including the European Space Agency's Climate Change Initiative, which makes full use of Europe's Earth observation space assets

to compile robust long-term global records of essential climate variables on sea ice, aerosols, glaciers, ice sheets, ocean colour, sea level and sea surface temperature. One of the two satellites operated by Norway (NorSat-1) hosts a total solar irradiance instrument, which is highly valuable for climate research.

125. The NC8 reflects actions taken to support capacity-building related to research and systematic observation in developing countries. Norway supports capacity-building programmes through cooperation between the Norwegian Meteorological Institute and meteorological services in Bangladesh, Myanmar and Viet Nam, with a focus on forecasting, forecast verification, climate services and ocean modelling, as well as strengthening early warning systems as part of national plans to prevent disasters caused by extreme weather.

126. During the review, Norway provided further information on its public funding support for research and development in developing countries, beyond the reporting period. This includes support provided by Norad in a variety of areas, including in relation to climate-related issues. In 2022 Norad funded climate-related projects with research and development as a main objective (NOK 336 million) or a significant objective (NOK 470 million). Within Norad's programme for capacity development in higher education and research for development, one of its six subprogrammes focuses on climate change and natural resource management, in particular strategies for adaptation and for reducing emissions from forest degradation and deforestation. Some of the initiatives financed by Norad include Coastal Oceans Research and Development in East Africa and an initiative for co-creating knowledge for local adaptation to climate change in 2021–2026.

### 2. Assessment of adherence to the reporting guidelines

127. The ERT assessed the information reported in the NC8 of Norway and identified an issue relating to transparency, and thus adherence to the UNFCCC reporting guidelines on NCs. The finding is described in table I.6.

## J. Education, training and public awareness

### 1. Technical assessment of the reported information

128. In its NC8 Norway provided information on the general policy on education, training and public awareness; primary, secondary and higher education; public information campaigns; training programmes; education materials; resource or information centres; the involvement of the public and NGOs; and its participation in international activities. Norway explained that several activities were launched to give the public a better understanding of climate change and its effects. Norway's general policy on the education system ensures that awareness and knowledge of issues related to sustainable development and climate change is embedded at all levels, including early childhood education and care, primary and secondary education and higher education. In accordance with Norway's national policy on the green shift, the Ministry of Education and Research largely focuses on meeting SDGs and works closely with other departments and ministries on implementing the SDGs at the national and global level. Each year, the Ministry reports to the Storting on progress in relation to the SDGs in the budget proposal. Norway maintains transparency with regard to environmental policymaking and the implementation of regulations by involving civil society and providing financial support to several NGOs. Norway provides financial support for Norwegian NGOs to enable their participation in various international meetings. The Generation Green initiative, which involves climate ambassadors, and the Environmental Information Act are key initiatives on information-sharing. State of the Environment Norway[11] provides the public with the latest information and developments on the environment. Norway is an active supporter of the United Nations Educational, Scientific and Cultural Organization and has a leading role in the global coordination of SDG 4 (quality education). In an effort to strengthen global academic and student mobility, Norway became the first country to ratify the Global Convention on the Recognition of Qualifications concerning Higher Education in 2020.

[11] Available at https://www.environment.no/.

### 2. Assessment of adherence to the reporting guidelines

129. The ERT assessed the information reported in the NC8 of Norway and identified an issue relating to transparency, and thus adherence to the UNFCCC reporting guidelines on NCs. The finding is described in table I.7.

# III. Conclusions and recommendations

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

131. The information provided in the NC8 includes all elements of the supplementary information under Article 7, paragraph 2, of the Kyoto Protocol. Norway reported on the national system, the national registry, supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol, PaMs in accordance with Article 2 of the Kyoto Protocol, domestic and regional programmes and/or legislative arrangements and enforcement and administrative procedures, information under Article 10 of the Kyoto Protocol, and financial resources provided to developing country Parties. Supplementary information under Article 7, paragraph 1, of the Kyoto Protocol on the minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol was provided by Norway in its 2022 annual submission.

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

133. In its NC8 Norway reported on its key national circumstances related to GHG emissions and removals, including its participation in the EU internal market since 1994 through the European Economic Area Agreement. Nearly all of Norway's electricity production is derived from renewable energy sources, but the petroleum industry will remain important to the country's economy. Norway has acknowledged the need to transition towards higher growth and job creation in less carbon-intensive sectors.

134. 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 3.5 per cent below its 1990 level in 2020, using GWP values from the AR5. Emissions peaked in 2007 and decreased thereafter. The level of emissions in 2021 was almost stable, falling by 0.7 per cent compared with the 2020 level. The changes in total emissions were driven mainly by factors such as higher uptake of more efficient and electric vehicles; increased use of biofuels in transportation; an increase in material recycling; and the ban on landfilling biodegradable waste.

135. As reported in the BR5, under the Convention Norway committed to achieving a quantified economy-wide emission reduction target of 30 per cent below the 1990 level by 2020, which was made operational through its quantified emission limitation or reduction commitment to ensure that average GHG emissions in 2013–2020 do not exceed 84 per cent of the 1990 level for the second commitment period of the Kyoto Protocol, and will use an emission budget approach for this period. The target covered $CO_2$, $CH_4$, $N_2O$, HFCs, PFCs, $SF_6$ and $NF_3$, expressed using GWP values from the AR4, and covered all sources and sectors included in the annual GHG inventory. Emissions and removals from the LULUCF sector were included in the target. Norway reported that it plans to make use of market-based mechanisms for achieving its target. In absolute terms, taking into account its base-year emissions for the second commitment period of the Kyoto Protocol of 51,192.77 kt $CO_2$ eq, the Party's total estimated emission budget for 2013–2020, including accounting for units

from market-based mechanisms and the contribution of LULUCF, is 348,914.30 kt $CO_2$ eq, equivalent to average annual emissions of 43,614.29 kt $CO_2$ eq in 2013–2020.

136. In addition to its 2020 target, Norway also reported on its longer-term targets of reducing emissions by at least 55 per cent compared with the 1990 level and achieving climate neutrality by 2030. Mandated by the Climate Change Act, Norway is committed to transitioning to a low-emission society by 2050, which would involve emission reductions of approximately 90–95 per cent below the 1990 level.

137. Between 2013 and 2020 Norway's total GHG emissions excluding LULUCF amounted to 421,860.00 kt $CO_2$ eq, the contribution of LULUCF amounted to 540.00 kt $CO_2$ eq and the use of market-based mechanisms amounted to 73,490.00 kt $CO_2$ eq, resulting in a net figure of 348,910.42 kt $CO_2$ eq, which equals 100 per cent of the Party's assigned amount for the second commitment period of the Kyoto Protocol. The ERT concluded that the total GHG emissions excluding LULUCF of Norway including the contribution of LULUCF and use of units from market-based mechanisms do not exceed the Party's emission budget corresponding to the 2020 target, and therefore that the target has been achieved. Norway's true-up period report confirms the assessment of the ERT with regard to the achievement of the 2020 target.

138. The GHG emission projections provided by Norway in its NC8 and BR5 correspond to the WEM scenario. Under the WEM scenario, emissions in 2030 are projected to be 25.0 per cent below the 1990 level and 21.7 per cent below the 2020 level.

139. Norway's main policy framework relating to energy and climate change is the Climate Change Act, aimed at driving efforts to meet its emission reduction targets for 2030 and 2050. The Party described the mitigation actions that it has implemented to help it achieve its 2020 and longer-term targets, which include mandatory emissions trading and GHG taxes, reflecting the 'polluter pays' principle. Currently, some 85 per cent of domestic emissions are subject to emissions trading, a carbon tax, or both. Key PaMs relate to the EU ETS; taxes including the $CO_2$ tax; CCS; policies in the petroleum industry; the Enova investment scheme; taxation in road transport, including $CO_2$ taxes on mineral fuels; blending mandates for biofuels in transport; and policies that address emissions in the shipping sector, including through the deployment of zero-emission ferries.

140. Norway continued to provide climate financing to developing countries in line with its ODA objectives and procedures, and to consider the interlinkages between climate change and development. The level of its financial support since the BR4 has increased by 8.0 per cent when considered in United States dollars, but has increased by 2.23 per cent when considered in the local currency. Its public financial support in 2019–2020 totalled USD 1,440.14 million. For those years, Norway provided more support for mitigation. The biggest share of support went to projects and programmes in the energy, agriculture and forestry, and water and sanitation sectors, as well as to general environmental protection and government and civil society. An example of this support is NICFI, which focuses on reducing GHG emissions from deforestation and forest degradation in developing countries (REDD+).

141. Norway continued to provide support for technology development and transfer and capacity-building. Priority for technological support was given to projects and programmes in the energy sector, including on renewable energy, energy access and energy efficiency, as well as in the agriculture and food security sectors, and to mitigation and adaptation in recipient countries. Over time, the focus has remained the same. Priority for capacity-building support was given to projects and programmes related to REDD+, and energy and agriculture, and to mitigation and adaptation in recipient countries. Over time, the focus has remained the same.

142. In its NC8 Norway provided information on the expected impacts of climate change in the country; the adaptation policies covering regional, sectoral and cross-sectoral vulnerabilities and considerations; and an outline of the action taken to implement Article 4, paragraph 1(b) and (e), of the Convention with regard to adaptation. Norway's climate projections indicate widespread warming across all regions and seasons. The Party recognizes the vulnerability of its natural environment, infrastructure and buildings, and water and sewage systems. Norway is actively engaged in international cooperation to

enhance adaptation efforts, including by providing support through bilateral partnerships with developing countries such as Ethiopia and Malawi.

143. In its NC8 Norway provided information on its activities relating to research and systematic observation. The Party aims for public funding on research and innovation to equal 1 per cent of GDP and surpassed this target in 2020, allocating 1.16 per cent of GDP. Norway funds domestic research in the areas of climate, energy, and CCS, and in polar and marine areas. Examples of international cooperation include research in the Svalbard region and capacity-building programmes involving collaboration between the Norwegian Meteorological Institute and meteorological services in developing countries such as Bangladesh, Myanmar and Viet Nam.

144. In its NC8 Norway provided information on its actions relating to education, training and public awareness. Norway has integrated sustainable development and climate change awareness into its education system, including by promoting understanding of climate change and its impacts, and pursuing the SDGs nationally and globally. Additionally, the Party took the lead in global academic and student mobility by becoming the first to ratify the Global Convention on the Recognition of Qualifications concerning Higher Education in 2020.

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

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

(i) Including in the description of each policy or measure or set of complementary measures reported, as appropriate, a brief description of the methods used to estimate quantitative impacts (see issue 2 in table I.2);

(ii) Presenting relevant information on factors and activities for all sectors over the projection period in order to provide the reader with a clearer understanding of emission trends. Such information may be presented in tabular format (see issue 4 in table I.3);

(iii) Including information on the national approach for tracking provision of technological and capacity-building support to non-Annex I Parties (see issue 1 in table I.4);

(iv) To the extent possible, including information on how it seeks to ensure that resources provided effectively address the needs of non-Annex I Parties, including information on the effectiveness of the support provided (see issue 2 in table I.4);

(v) Providing information on success and failure stories regarding technology transfer activities (see issue 5 in table I.4);

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

(i) Including information on financial support provided for the purpose of assisting non-Annex I Parties to adapt to any economic and social consequences of response measures (see issue 3 in table I.4);

(ii) Providing more detailed information on its assistance to developing countries for meeting the costs of adaptation (see issue 4 in table I.4).

146. In the course of the review of Norway's BR5, the ERT formulated the following recommendations relating to adherence to the UNFCCC reporting guidelines on BRs:

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

(i) Presenting relevant information on factors and activities for all sectors over the projection period (see issue 4 in table II.1);

(ii) Including information on the national approach for tracking provision of technological and capacity-building support to non-Annex I Parties (see issue 1 in table II.2);

(iii) Providing information on how it seeks to ensure that resources provided effectively address the needs of non-Annex I Parties (see issue 2 in table II.2);

(b) To improve the transparency of its reporting by including information on financial support provided for the purpose of assisting non-Annex I Parties to adapt to any economic and social consequences of response measures (see issue 3 in table II.2).

# Annex I

## Assessment of adherence to the reporting guidelines for the eighth national communication of Norway

Tables I.1–I.7 summarize the ERT assessment of adherence to the UNFCCC reporting guidelines on NCs for Norway's NC8.

Table I.1
**Findings on national circumstances relevant to greenhouse gas emissions and removals from the review of the eighth national communication of Norway**

| *No.* | *Reporting requirement, issue type and assessment* | *Description of the finding with recommendation or encouragement* |
|---|---|---|
| 1 | Reporting requirement specified in paragraph 3<br>Issue type: transparency<br>Assessment: encouragement | The ERT noted that (1) the information reported by the Party in the NC8 on national circumstances related to the industry sector, according to which process emissions have decreased by 45 per cent since 1990, is inconsistent with the information provided in NC8 table AI-1 and CTF table 1, and (2) the NC8 repeated information on national circumstances related to the agriculture sector from the NC7 (i.e. share of agriculture emissions in Norway's total emissions and its emission trend from 1990 to the latest reported year), and that information is inconsistent with the information provided in NC8 table AI-1 and BR5 CTF table 1.<br>During the review, the Party confirmed the correct emission trend for 1990–2020 for the industry and agriculture sectors (decreases of 40 and 6 per cent, respectively), while the share of agriculture emissions was 9.2 per cent of total emissions. These updates are consistent with NC8 table AI-1 (BR5 CTF table 1).<br>The ERT encourages the Party, in its next NC, to provide information on national circumstances that is consistent with the reporting in the GHG inventory. |

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

Table I.2
**Findings on policies and measures from the review of the eighth national communication of Norway**

| *No.* | *Reporting requirement, issue type and assessment* | *Description of the finding with recommendation or encouragement* |
|---|---|---|
| 1 | Reporting requirement specified in paragraph 10<br>Issue type: transparency<br>Assessment: encouragement | The Party did not indicate in its NC8 which PaMs are innovative and/or effectively replicable by other Parties.<br>During the review, Norway confirmed that it is challenging to judge which PaMs may be seen as innovative or to assess what may be replicable by other Parties. However, the Party noted that pricing emissions is an example of an effective way of reducing emissions, and that this measure could be combined with a ban on the use of mineral oil for heating in buildings and housing construction sites. Other examples of replicable policies include the Party's tax scheme, tax advantages and other incentives aimed at encouraging the purchase of low- and zero-emission cars, which have resulted in Norway having the largest share of electric vehicles in the world.<br>The ERT encourages Norway to indicate in its next NC the PaMs that are innovative and/or effectively replicable by other Parties. |
| 2 | Reporting requirement specified in paragraph 20<br>Issue type: completeness<br>Assessment: recommendation | The Party did not include in its NC8 a brief description of the methods used to estimate impacts for all policies where quantitative effects were estimated. Although a brief description of methods was reported for a number of key implemented policies, such as the $CO_2$ tax, PaMs in the petroleum sector, non-methane volatile organic compounds from offshore loading and storage of crude oil, information on methods was not reported for a number of PaMs, including for CCS, the ban on the use of mineral oil, F-gases, the green shipping programme, requirements for zero- and low-emission technology in tenders for public ferries, and the risk loan scheme for short-sea vessels and the fishing fleet.<br>During the review, Norway explained that, when developing the NC8, it did not prioritize reporting estimation methods for all PaMs where quantitative effects were |

| *No.* | *Reporting requirement, issue type and assessment* | *Description of the finding with recommendation or encouragement* |
|---|---|---|
| | | estimated. The Party also provided information on the methods used to estimate the effects of two PaMs that are expected to have significant mitigation effects (CCS and F-gases).<br>The ERT recommends that Norway include in the next NC in the description of each policy or measure or set of complementary measures reported, as appropriate, a brief description of the methods used to estimate quantitative impacts. |
| 3 | Reporting requirement specified in paragraph 21<br>Issue type: completeness<br>Assessment: encouragement | The Party did not provide information on costs for each of the PaMs reported, or a contextual definition of 'cost' in this regard. Moreover, the Party did not provide information for each of the PaMs reported on non-GHG mitigation benefits, for example, reduced emissions of other pollutants and health benefits.<br>During the review, Norway explained that estimating costs for all PaMs was not feasible as it would require a lot of information, including contextual and political information. Therefore, a definition of the term 'cost' would not be relevant in this context. Norway informed the ERT that it intends to improve the reporting of information on costs of PaMs in its next NC submission, to the extent possible. Norway further explained that it did not prioritize reporting information on non-GHG mitigation benefits during the preparation of the NC8.<br>The ERT encourages Norway to provide in its next NC, to the extent possible, information on (1) the cost of each of the PaMs reported and brief definitions of the term 'cost' in that context and (2) non-GHG mitigation benefits for each of the reported PaMs. |
| 4 | Reporting requirement specified in paragraph 23<br>Issue type: transparency<br>Assessment: encouragement | The Party reported information about the PaMs no longer in place, with explanations of why those PaMs are no longer in place, in its NC8. However, Norway did not provide a clear explanation as to why the policy or measure "arrangement to reduce emissions in the processing industries 2004" is no longer in place.<br>During the review Norway explained that this policy or measure had a target for 2007, which is why it is no longer in place.<br>The ERT encourages Norway, when reporting in its next NC on PaMs no longer in place, to provide clear explanations of why particular PaMs are no longer in place. |

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

Table I.3
**Findings on projections including aggregate effects of policies and measures reported in the eighth national communication of Norway**

| *No.* | *Reporting requirement, issue type and assessment* | *Description of the finding with recommendation or encouragement* |
|---|---|---|
| 1 | Reporting requirement specified in paragraph 25<br>Issue type: completeness<br>Assessment: encouragement | The Party did not report projection data for the WOM or WAM scenarios in its NC8, but projections were included for those scenarios in one diagram (figure 5-5).<br>During the review, the Party explained that the projections for the WOM and WAM scenarios in figure 5-5 were provided for illustrative purposes only.<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 NC. |
| 2 | Reporting requirement specified in paragraph 41<br>Issue type: completeness<br>Assessment: encouragement | The Party did not provide references to documents containing detailed information on the models used for the projection scenarios.<br>During the review, Norway provided a weblink for documentation for SNOW, the main model used for the projections.<br>The ERT encourages Norway to enhance the completeness of its reporting by including in its next NC references to documents containing more detailed information on the models and approaches used for the projection scenarios. |
| 3 | Reporting requirement specified in paragraph 42 | The Party did not report in its NC8 the main differences in assumptions, methods and results between the NC7 and NC8. |

| *No.* | *Reporting requirement, issue type and assessment* | *Description of the finding with recommendation or encouragement* |
|---|---|---|
| | Issue type: completeness | During the review, Norway provided additional information on changes in the modelling since the NC7 not described in the NC8. |
| | Assessment: encouragement | The ERT encourages Norway to enhance completeness of its reporting by describing in the next NC the main differences in the projections compared with the previous NC. |
| 4 | Reporting requirement specified in paragraph 45 | Norway presented in its NC8 relevant information in textual format on factors and activities for some sectors for the projection period. However, the Party did not present relevant information on factors and activities for the industrial processes and agriculture sectors. Furthermore, the Party did not present information for the projection period in tabular format to provide the reader with an understanding of emission trends. |
| | Issue type: completeness | |
| | Assessment: recommendation | During the review, Norway provided additional information on the underlying factors and activities for the industrial processes and agriculture sectors. Norway further explained that it did not prioritize reporting information on factors and activities for each sector over the projection period in tabular format when developing its NC8. |
| | | The ERT recommends that Norway present relevant information in its next NC on factors and activities for all sectors over the projection period in order to provide the reader with a clearer understanding of emission trends. Such information may be presented in tabular format. |

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

Table I.4
**Findings on financial, technological and capacity-building support from the review of the eighth national communication of Norway**

| *No.* | *Reporting requirement, issue type and assessment* | *Description of the finding with recommendation or encouragement* |
|---|---|---|
| 1 | Reporting requirement specified in paragraph 49 | The Party did not report in its NC8 a description of its national approach for tracking provision of technological and capacity-building support to non-Annex I Parties. |
| | Issue type: completeness | During the review, Norway explained that since it does not have an established method for comprehensively tracking activities that promote technology transfer and capacity-building, it has included information on the most relevant activities in textual format and in qualitative tables. The Party also explained that it is currently participating in the OECD DAC WP-STAT to develop a method for tracking activities relevant to capacity-building and technology transfer, which can also be used to make its reporting to the UNFCCC more precise and transparent. |
| | Assessment: recommendation | |
| | | The ERT recommends that Norway include in the next NC information on the national approach for tracking provision of technological and capacity-building support to non-Annex I Parties. |
| 2 | Reporting requirement specified in paragraph 51 | The Party did not report in its NC8 how it seeks to ensure that the resources it provides effectively address the needs of non-Annex I Parties with regard to climate change adaptation and mitigation; this information was only provided for the provision of technological and capacity-building support. |
| | Issue type: completeness | During the review, Norway explained that all Norwegian ODA, including climate finance, is demand-driven, addressing the needs and priorities of partner countries, and is allocated on the basis of priority areas, such as reducing emissions from deforestation and forest degradation, renewable energy, and climate change adaptation, including risk reduction. Norway also explained that according to guidance on the preparation and approval of Norwegian support, a project or programme should be assessed in terms of its relevance to priorities and plans of the recipient country and/or cooperation partner, or its relevance to the target group and needs in the recipient country, with the aim of ensuring that the resources effectively address the needs of developing country Parties. |
| | Assessment: recommendation | |
| | | The ERT recommends that Norway provide in its next NC, to the extent possible, information on how it seeks to ensure that the resources provided effectively address the needs of non-Annex I Parties, as it did during the review, including by providing information on effectiveness of the support provided. |

| *No.* | *Reporting requirement, issue type and assessment* | *Description of the finding with recommendation or encouragement* |
|---|---|---|
| 3 | Reporting requirement specified in paragraph 52<br>Issue type: transparency<br>Assessment: recommendation | Norway reported in its NC8 information on financial support disbursed and committed for the purpose of assisting non-Annex I Parties to mitigate GHG emissions and adapt to the adverse effects of climate change, but the Party did not clearly report on the financial support provided to adapt to any economic and social consequences of response measures. The ERT noted that although Norway included descriptive information on a programme and on bilateral support under a section dedicated to response measures, the description does not include financial information on the support disbursed and/or committed.<br>During the review, Norway explained that although it did not single out support provided to adapt to any economic and social consequences of response measures, it recognizes that it is important that implemented PaMs ensure a transition that enables everyone to benefit from the opportunities presented by a low-emission future, and this perspective is integrated in the country's climate finance. Norway also added that countries' NDCs and NAPs need to be revisited, together with development plans and sectoral strategies in recipient countries, in order to achieve the SDGs, solve the climate crisis and focus on alleviating poverty. Norway also added that it has recently established a bilateral country-specific renewable energy management programme called EfD, which focuses on reducing poverty through energy access.<br>The ERT recommends that Norway provide in its next NC information on financial support provided for the purpose of assisting non-Annex I Parties to adapt to any economic and social consequences of response measures, as it did during the review. |
| 4 | Reporting requirement specified in paragraph 54<br>Issue type: transparency<br>Assessment: recommendation | Norway did not provide detailed information on the assistance provided for the purpose of assisting developing country Parties that are particularly vulnerable to the adverse effects of climate change in meeting the costs of adaptation to those adverse effects.<br>In response to a question from the ERT during the review, Norway explained that this is partly achieved by responding to the needs of developing countries, adding that, at the same time, a large part of the climate finance provided for adaptation is channelled through multilateral funds; therefore, the task of meeting the costs of adaptation is delegated to those funds. Norway has developed a strategy for climate change adaptation, which will enable it to provide more details on its strategy for meeting the costs of adaptation in future reporting.<br>The ERT reiterates the recommendation from the previous review report that Norway enhance the transparency of its reporting on its assistance to developing countries for meeting the costs of adaptation by providing more detailed information in its next NC. |
| 5 | Reporting requirement specified in paragraph 57<br>Issue type: completeness<br>Assessment: recommendation | Norway did not provide clear information on success and failure stories using table 9 of the UNFCCC reporting guidelines on NCs; the ERT noted that this information was scattered throughout the NC8.<br>During the review, and in response to a question raised by the ERT, Norway explained that it faced challenges in including such stories in its reporting, but stressed that successes and failures exist and are important for measuring outcomes. The Party recognizes the importance of developing a systematic way of structuring the information reported in relation to its ODA and is striving to adopt a more structured approach to its reporting in this area.<br>The ERT reiterates the recommendation made by the previous ERT that Norway, when reporting on technology transfer activities, provide information as required by table 9 of the UNFCCC reporting guidelines on NCs, including on success and failure stories, in its next NC. |

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

Table I.5
**Findings on vulnerability assessment, climate change impacts and adaptation measures from the review of the eighth national communication of Norway**

| *No.* | *Reporting requirement, issue type and assessment* | *Description of the finding with recommendation or encouragement* |
|---|---|---|
| 1 | Reporting requirement specified in paragraph 46<br>Issue type: transparency<br>Assessment: encouragement | The Party reported information on vulnerability and climate change impacts in various areas; however, the methodologies or guidance used in assessing the vulnerability and expected impacts were not clearly described or referenced, particularly in NC8 sections 6.3.3.5 (water and wastewater systems), 6.3.3.8 (cultural heritage) and 6.3.4.6 (insurance). Additionally, no bibliographic details or weblinks were provided for some key white papers and reports, such as *Climate change adaptation in Norway*, the Norwegian red lists, *Storm water run-off in towns and cities* and *Climate risk and the Norwegian economy*.<br>During the review, the Party explained that Official Norwegian Report 2010:10 was used as guidance for cross-sectoral climate vulnerability assessments in Norway. Sectoral climate change impacts and adaptation measures were derived from literature, expert contributions and data from the Norwegian Environment Agency's climate adaptation website, and mandated annual reports under the Climate Change Act. Specific details in sections 6.3.3.5 (water and wastewater systems), 6.3.3.8 (cultural heritage) and 6.3.4.6 (insurance) were provided by experts from government bodies, including the Norwegian Environment Agency, the Directorate for Cultural Heritage, and the Norwegian Directorate for Civil Protection. Additionally, the Party provided weblinks for relevant documents, including key white papers and reports.<br>The ERT encourages the Party to describe and reference in its next NC relevant methodologies and guidance used for assessing climate change impacts, vulnerability and adaptation measures, including the bibliographic details or weblinks for the references used in reporting such information. |

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

Table I.6
**Findings on research and systematic observation from the review of the eighth national communication of Norway**

| *No.* | *Reporting requirement, issue type and assessment* | *Description of the finding with recommendation or encouragement* |
|---|---|---|
| 1 | Reporting requirement specified in paragraph 64<br>Issue type: transparency<br>Assessment: encouragement | Norway did not refer in its NC8 to any general policies on and funding of systematic observation.<br>During the review, the Party provided information on its general policy on climate-related systematic observation and its general data policy, and clarified the responsibilities of the Ministry of Climate and Environment and of the Norwegian Environment Agency. Although the development of a specific environmental data policy for the Ministry's agencies was considered, it was decided in 2023 that such a policy would not be a sufficiently effective tool for pursuing the goals in place in this area and that existing strategies would cover the general goals for environmental observation and data.<br>To increase transparency, the ERT encourages Norway to provide information in its next NC on its general policy on and funding of systematic observation. |

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

Table I.7
**Findings on education, training and public awareness from the review of the eighth national communication of Norway**

| *No.* | *Reporting requirement, issue type and assessment* | *Description of the finding with recommendation or encouragement* |
|---|---|---|
| 1 | Reporting requirement specified in paragraph 69<br>Issue type: transparency<br>Assessment: encouragement | The Party provided information related to education and public awareness in its NC8. However, the ERT noted gaps in the information provided on actions related to training; specifically, with regard to whether training programmes are built into the education system or are operationalized separately.<br>During the review Norway explained that chapter 9 of its NC8 covers training programmes offered by higher education institutions. The Government's long-term plan for research and higher education 2023–2032 (contained in a white paper) contains a section on flexible and accessible training programmes available through existing institutions.<br>The ERT encourages Norway to provide clear information on training programmes in its NC. |

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

# Annex II

## Assessment of adherence to the reporting guidelines for the fifth biennial report of Norway

The BR5 of Norway is the final BR under the measurement, reporting and verification system established under the Convention.[1] Nevertheless, ERTs continue to provide recommendations and encouragements to the Parties on completeness, transparency and adherence to the UNFCCC reporting guidelines on BRs. Parties may find these recommendations and encouragements relevant, as appropriate, when preparing their initial biennial transparency report under the enhanced transparency framework of the Paris Agreement. Tables II.1–II.2 summarize the ERT assessment of adherence to the UNFCCC reporting guidelines on BRs for Norway's BR5.

Table II.1
**Findings on projections reported in the fifth biennial report of Norway**

| *No.* | *Reporting requirement and issue type* | *Description of the finding with recommendation or encouragement* |
|---|---|---|
| 1 | Reporting requirement[a] specified in paragraph 25<br>Issue type: completeness<br>Assessment: encouragement | The Party did not report projection data for the WOM or WAM scenarios in its BR5, but projections were included for those scenarios in one diagram (figure A3.2).<br>During the review, the Party explained that the projections for the WOM and WAM scenarios presented in figure A3.2 were provided for illustrative purposes only.<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. |
| 2 | Reporting requirement[a] specified in paragraph 41<br>Issue type: completeness<br>Assessment: encouragement | The Party did not provide references to documents containing detailed information on the models used for the projection scenarios.<br>During the review, Norway provided a weblink for documentation for SNOW, the main model used for the projections.<br>The ERT encourages Norway to enhance the completeness of its reporting by including references to documents containing more detailed information on the models and approaches used for the projection scenarios. |
| 3 | Reporting requirement[a] specified in paragraph 42<br>Issue type: completeness<br>Assessment: encouragement | The Party did not report in its BR5 the main differences in assumptions, methods and results between the BR5 and NC7. Instead, the Party reported differences between the BR5 and BR4.<br>During the review, Norway provided additional information on changes in the modelling since the NC7 not described in the BR5.<br>The ERT encourages Norway to describe the main differences in the projections compared with its most recent NC. |
| 4 | Reporting requirement[a] specified in paragraph 45<br>Issue type: completeness<br>Assessment: recommendation | Norway presented in its BR5 relevant information in textual format on factors and activities for some sectors for the projection period. However, the Party did not present relevant information on factors and activities for the industrial processes and agriculture sectors. Furthermore, the Party did not present information for the projection period in tabular format to provide the reader with an understanding of emission trends.<br>During the review, Norway provided additional information on the underlying factors and activities for the industrial processes and agriculture sectors. Norway further explained that it did not prioritize reporting information on factors and activities for each sector over the projection period in tabular format when developing its BR5.<br>The ERT recommends that Norway present relevant information on factors and activities for all sectors over the projection period in order to provide the reader with a |

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

| No. | Reporting requirement and issue type | Description of the finding with recommendation or encouragement |
|---|---|---|
| | | clearer understanding of emission trends. Such information may be presented in tabular format. |

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

[a] 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.

Table II.2

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

| No. | Reporting requirement and issue type | Description of the finding with recommendation or encouragement |
|---|---|---|
| 1 | Reporting requirement specified in paragraph 14<br>Issue type: completeness<br>Assessment: recommendation | The Party did not report in its BR5 a description of its national approach for tracking provision of technological and capacity-building support to non-Annex I Parties.<br>During the review, Norway explained that since it does not have an established method for comprehensively tracking activities that promote technology transfer and capacity-building, it has included information on the most relevant activities in textual format and in qualitative tables. The Party also explained that it is currently participating in the OECD DAC WP-STAT to develop a method for tracking activities relevant to capacity-building and technology transfer, which can also be used to make its reporting to the UNFCCC more precise and transparent.<br>The ERT recommends that Norway include information on the national approach for tracking provision of technological and capacity-building support to non-Annex I Parties. |
| 2 | Reporting requirement specified in paragraph 16<br>Issue type: completeness<br>Assessment: recommendation | The Party did not report in its BR5 how it seeks to ensure that the resources it provides effectively address the needs of non-Annex I Parties with regard to climate change adaptation and mitigation; this information was only provided for the provision of technological and capacity-building support.<br>During the review, Norway explained that all Norwegian ODA, including climate finance, is demand-driven, addressing the needs and priorities of partner countries, and is allocated on the basis of priority areas, such as reducing emissions from deforestation and forest degradation, renewable energy, and climate change adaptation, including risk reduction. Norway also explained that according to guidance on the preparation and approval of Norwegian support, a project or programme should be assessed in terms of its relevance to priorities and plans of the recipient country and/or cooperation partner or its relevance to the target group and needs in the recipient country, with the aim of ensuring that the resources effectively address the needs of developing country Parties.<br>The ERT recommends that Norway provide, to the extent possible, information on how it seeks to ensure that the resources provided effectively address the needs of non-Annex I Parties, as it did during the review, including by providing information on effectiveness of the support provided. |
| 3 | Reporting requirement specified in paragraph 17<br>Issue type: transparency<br>Assessment: recommendation | Norway reported in its BR5 information on financial support disbursed and committed for the purpose of assisting non-Annex I Parties to mitigate GHG emissions and adapt to the adverse effects of climate change, but the Party did not clearly report on the financial support provided to adapt to any economic and social consequences of response measures.<br>The ERT noted that, although Norway included descriptive information on a programme and on bilateral support under a section dedicated to response measures, the description does not include financial information on the support disbursed and/or committed.<br>During the review, Norway explained that although it did not single out support provided to adapt to any economic and social consequences of response measures, it recognizes that it is important that implemented PaMs ensure a transition that enables everyone to benefit from the opportunities presented by a low-emission future, and this perspective is integrated in the country's climate finance. Norway also added that countries' NDCs and NAPs need to be revisited, together with development plans and sectoral strategies in the recipient countries, in order to achieve the SDGs, solve the climate crisis and focus on alleviating poverty. Norway also added that it has recently |

| *No.* | *Reporting requirement and issue type* | *Description of the finding with recommendation or encouragement* |
|---|---|---|
| | | established a bilateral country-specific renewable energy management programme called EfD, which focuses on reducing poverty through energy access.<br><br>The ERT recommends that Norway provide information on financial support provided for the purpose of assisting non-Annex I Parties to adapt to any economic and social consequences of response measures, as it did during the review. |
| 4 | Reporting requirement specified in paragraph 21<br><br>Issue type: completeness<br><br>Assessment: encouragement | Norway did not provide clear information on success and failure stories in tabular format in its BR5.<br><br>During the review, and in response to a question raised by the ERT, Norway explained that it faced challenges in including such stories in its reporting, but stressed that successes and failures exist and are important for measuring outcomes. The Party recognizes the importance of developing a systematic way of structuring the information reported in relation to its ODA and is striving to adopt a more structured approach to its reporting in this area.<br><br>The ERT reiterates the encouragement from the previous review report for Norway, when reporting on technology transfer activities, to provide information as required by the UNFCCC reporting guidelines, including on success and failure stories. |

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

# Annex III

## Documents and information used during the review

### A. Reference documents

2022 GHG inventory submission of Norway. Available at https://unfccc.int/ghg-inventories-annex-i-parties/2022.

2023 GHG inventory submission of Norway. Available at https://unfccc.int/ghg-inventories-annex-i-parties/2023.

BR4 of Norway. Available at https://unfccc.int/BR4.

BR5 CTF tables of Norway. Available at https://unfccc.int/BR5.

BR5 of Norway. Available at https://unfccc.int/BR5.

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

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

"Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications". FCCC/CP/2019/13/Add.1. Available at https://unfccc.int/documents/210471.

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

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

"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.

NC8 of Norway. Available at https://unfccc.int/NC8.

Report on the individual review of the annual submission of Norway submitted in 2022. FCCC/ARR/2022/NOR. Available at https://unfccc.int/documents/627532.

Report on the technical review of the BR4 of Norway. FCCC/TRR.4/NOR. Available at https://unfccc.int/fourth-biennial-reports.

Report upon expiration of the additional period for fulfilling commitments for the second commitment period of the Kyoto Protocol of Norway. Available at https://unfccc.int/sites/default/files/resource/True-up%20report%20Norway%202023.pdf.

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

### B. Additional information provided by the Party

Responses to questions during the review were received from Kajittha Sivathas (Ministry of Climate and Environment of Norway), including additional material.