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Report on the technical review of the fourth biennial report of the United Kingdom of Great Britain and Northern Ireland

Developed country Parties were requested by decision 2/CP.17 to submit their fourth biennial report to the secretariat by 1 January 2020. This report presents the results of the technical review of the fourth biennial report of the United Kingdom of Great Britain and Northern Ireland, conducted by an expert review team in accordance with the “Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention”. The review took place from 22 to 26 March 2021 remotely.



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Abbreviations and acronyms

AEA	annual emission allocation
AR	Assessment Report of the Intergovernmental Panel on Climate Change
BEIS	Department for Business, Energy and Industrial Strategy of the United Kingdom Government
BR	biennial report
CH ₄	methane
CO ₂	carbon dioxide
CO ₂ eq	carbon dioxide equivalent
CTF	common tabular format
DAC	Development Assistance Committee
ERT	expert review team
ESD	European Union effort-sharing decision
EU	European Union
EU ETS	European Union Emissions Trading System
F-gas	fluorinated gas
GBP	pound(s) sterling
GDP	gross domestic product
GHG	greenhouse gas
GWP	global warming potential
HFC	hydrofluorocarbon
IE	included elsewhere
IPCC	Intergovernmental Panel on Climate Change
IPPU	industrial processes and product use
LULUCF	land use, land-use change and forestry
NA	not applicable
NC	national communication
NDC	nationally determined contribution
NE	not estimated
NECP	National Energy and Climate Plan
NF ₃	nitrogen trifluoride
NMVOC	non-methane volatile organic compound
NO	not occurring
non-Annex I Party	Party not included in Annex I to the Convention
NO _x	nitrogen oxides
N ₂ O	nitrous oxide
ODA	official development assistance
OECD	Organisation for Economic Co-operation and Development
PaMs	policies and measures
PFC	perfluorocarbon
SF ₆	sulfur hexafluoride
SO ₂	sulfur dioxide
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’

I. Introduction and summary

A. Introduction

1. This is a report on the centralized technical review of the BR4¹ of the United Kingdom of Great Britain and Northern Ireland. The review was organized by the secretariat in accordance with the “Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention”, particularly “Part IV: UNFCCC guidelines for the technical review of biennial reports from Parties included in Annex I to the Convention” (annex to decision 13/CP.20).

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

3. The review was conducted together with the review of one other Party included in Annex I to the Convention from 22 to 26 March 2021 remotely² by the following team of nominated experts from the UNFCCC roster of experts: Gamze Celikyilmaz (Turkey), Adriana Coppola (Costa Rica), Wolfram Jörß (EU), Jenny Mager (Chile), Ole-Kenneth Nielsen (Denmark) and Jongikhaya Witi (South Africa). Mr. Nielsen was the lead reviewer. The review was coordinated by Nalin Srivastava and Veronica Colerio (secretariat).

B. Summary

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

1. Timeliness

5. The BR4 was submitted on 31 December 2019, before the deadline of 1 January 2020 mandated by decision 2/CP.17. The BR4 CTF tables were also submitted on 31 December 2019. The BR4 and CTF tables were resubmitted on 13 April 2021 to address issues raised during the review. The resubmission included additional summary information on national inventory arrangements; changes to the mitigation impacts reported in CTF table 3; additional information in the BR4 on the geographical coverage of the sensitivity analysis; and information on success and failure stories regarding technology transfer activities. Unless otherwise specified, the information and values from the latest submission are used in this report.

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

6. The United Kingdom made efforts to improve its reporting in the BR4 by addressing the recommendations and encouragements from the previous review report. The ERT noted that the Party had improved:

(a) The transparency of the information on GHG emissions and removals related to its quantified economy-wide emission reduction target by providing a description of changes in its domestic institutional arrangements;

(b) The transparency of the information on progress towards achieving its quantified economy-wide emission reduction target by including the results and explanations of projections both by sector and by gas;

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

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

(c) The completeness of the information on progress towards achieving its quantified economy-wide emission reduction target by including a WAM scenario for the projections and by reporting the projections of emissions related to fuel sold to ships and aircraft engaged in international transport separately.

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

Table 1

Summary of completeness and transparency of mandatory information reported by the United Kingdom in its fourth biennial report

<i>Section of BR</i>	<i>Completeness</i>	<i>Transparency</i>	<i>Reference to description of recommendations</i>
GHG emissions and removals	Complete	Transparent	–
Quantified economy-wide emission reduction target and related assumptions, conditions and methodologies	Complete	Mostly transparent	Issue 1 in table 3
Progress in achievement of targets	Mostly complete	Mostly transparent	Issues 1–3 in table 5; issue 1 in table 7
Provision of support to developing country Parties	Complete	Partially transparent	Issues 1–4 in table 14

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

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

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

1. Technical assessment of the reported information

8. Total GHG emissions³ excluding emissions and removals from LULUCF decreased by 41.6 per cent between 1990 and 2018, whereas total GHG emissions including net emissions or removals from LULUCF decreased by 42.9 per cent over the same period. Emissions peaked in 1991 and decreased thereafter. The changes in total emissions were driven mainly by factors such as the shift away from coal-fired power generation towards increased use of natural gas and renewable energy sources, tighter regulations on landfills including increased use of landfill CH₄ in gas flares and engines, and the introduction of abatement technology in adipic acid and nitric acid production. Emission trends were also influenced by significant one-off events affecting certain years of the time series, including the 2008 global economic recession, which resulted in reduced emissions owing to low levels of consumption of goods and services, and the cold weather in the United Kingdom in 2010 and 2012, which resulted in increased emissions from gas consumption for heating.

9. Table 2 illustrates the emission trends by sector and by gas for the United Kingdom. Note that information in this paragraph and table 2 is based on the United Kingdom’s 2020 annual submission, version 1.0, which has not yet been subject to review. All emission data in subsequent chapters are based on the United Kingdom’s BR4 CTF tables unless otherwise noted. The emissions reported in the 2020 annual submission differ from the data reported in CTF table 1 owing to recalculations made in the 2020 submission. Major recalculations resulted in an increase in estimated removals from harvested wood products stemming from

³ In this report, the term “total GHG emissions” refers to the aggregated national GHG emissions expressed in terms of CO₂ eq excluding LULUCF, unless otherwise specified.

a revision of activity data; an increase in estimated removals from forest land stemming from improvements and corrections made to the forestry model and updated activity data for the forestry sector; an increase in estimated emissions from cropland management resulting from changes in the reference soil organic carbon stocks; and a decrease in estimated emissions from manufacturing industries and construction resulting from a revision of the emission factor for coal used to estimate emissions for the cement sector.

Table 2

Greenhouse gas emissions by sector and by gas for the United Kingdom for 1990–2018

Sector	GHG emissions (kt CO ₂ eq)					Change (%)		Share (%)	
	1990	2000	2010	2017	2018	1990–	2017–	1990	2018
						2018	2018		
1. Energy	614 863.11	565 931.92	507 690.23	382 371.32	375 272.30	–39.0	–1.9	77.1	80.5
A1. Energy industries	237 423.55	200 662.05	194 918.74	103 569.13	96 275.16	–59.5	–7.0	29.8	20.7
A2. Manufacturing industries and construction	95 792.10	90 699.34	62 546.52	52 502.83	51 192.28	–46.6	–2.5	12.0	11.0
A3. Transport	122 468.18	130 288.07	121 978.43	124 838.63	122 992.53	0.4	–1.5	15.4	26.4
A4. and A5. Other	117 456.23	122 184.22	114 731.09	91 449.96	94 800.12	–19.3	3.7	14.7	20.3
B. Fugitive emissions from fuels	41 723.05	22 098.25	13 515.45	10 010.79	10 012.21	–76.0	0.0	5.2	2.1
C. CO ₂ transport and storage	NO	NO	NO	NO	NO	–	–	–	–
2. IPPU	66 767.50	40 943.98	35 822.03	30 557.70	28 507.41	–57.3	–6.7	8.4	6.1
3. Agriculture	49 215.36	45 964.34	40 941.42	41 588.72	41 159.25	–16.4	–1.0	6.2	8.8
4. LULUCF	132.46	–3 885.46	–8 850.94	–9 787.87	–9 968.00	–7 625.1	–1.8	NA	NA
5. Waste	66 966.06	63 439.46	30 039.54	20 742.02	20 992.92	–68.7	1.2	8.4	4.5
6. Other ^a	NO	NO	NO	NO	NO	–	–	–	–
<i>Gas^b</i>									
CO ₂	601 187.19	568 220.06	512 864.79	388 803.41	380 849.88	–36.7	–2.0	75.4	81.7
CH ₄	133 060.43	109 036.79	64 242.42	51 965.79	51 936.28	–61.0	–0.1	16.7	11.1
N ₂ O	46 210.68	26 685.86	19 905.22	19 306.37	19 209.71	–58.4	–0.5	5.8	4.1
HFCs	14 391.43	9 885.02	16 486.95	14 180.88	13 132.70	–8.7	–7.4	1.8	2.8
PFCs	1 651.35	596.79	287.71	493.20	256.84	–84.4	–47.9	0.2	0.1
SF ₆	1 310.55	1 853.49	705.85	509.58	545.89	–58.3	7.1	0.2	0.1
NF ₃	0.42	1.69	0.27	0.53	0.58	38.1	9.4	0.0	0.0
Total GHG emissions excluding LULUCF	797 812.04	716 279.71	614 493.22	475 259.76	465 931.88	–41.6	–2.0	100.0	100.0
Total GHG emissions including LULUCF	797 944.51	712 394.25	605 642.28	465 471.90	455 963.87	–42.9	–2.0	–	–

Source: GHG emission data: United Kingdom's 2020 annual submission, version 1.1.

^a Emissions and removals reported under the sector other (sector 6) are not included in the total GHG emissions. The United Kingdom reported emissions in the category other as "NO".

^b Emissions by gas without LULUCF. The Party did not report indirect CO₂ emissions.

10. In brief, the United Kingdom's national inventory arrangements were established in accordance with EU legislation set out in decision 280/2004/EC, the Greenhouse Gas Emissions Trading Scheme (Amendment) Regulations of 2014 and the National Emissions Inventory Regulations of 2005. BEIS is the single national entity responsible for the management and continuous improvement of the United Kingdom's GHG inventory. BEIS established the interdepartmental National Inventory Steering Committee, which is responsible for prioritizing improvements in, providing guidance on and granting approval for submission of the national GHG inventory. Ricardo Energy and Environment, an environment consultancy, is the delegated inventory agency tasked with preparing and compiling the Party's GHG inventory and leads the preparation of emission estimates for the

energy, IPPU and waste sectors. None of the national inventory arrangements described in the BR4 have changed since the BR3. As described in the 2020 national inventory report (section 1.2.1.1), two minor changes have been made to the national inventory arrangements since the BR3, namely the introduction of biannual meetings between BEIS and the devolved administrations of Scotland, Wales and Northern Ireland to facilitate discussions on the GHG inventory at the subnational level ahead of meetings of the National Inventory Steering Committee; and the Centre for Ecology and Hydrology, a member of the inventory agency consortium, has become independent from the Natural Environment Research Council.

2. Assessment of adherence to the reporting guidelines

11. The ERT assessed the information reported in the BR4 of the United Kingdom and recognized that the reporting is complete, transparent and thus adhering to the UNFCCC reporting guidelines on BRs. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

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

1. Technical assessment of the reported information

12. For the United Kingdom the Convention entered into force on 21 March 1996. Under the Convention the United Kingdom committed to contributing to the achievement of the joint EU economy-wide emission reduction target of 20 per cent below the 1990 level by 2020. The United Kingdom left the EU in 2020. Under the terms of the Withdrawal Agreement, the United Kingdom remains committed to fulfilling its shared target with the EU under the Kyoto Protocol.

13. The target for the EU and its member States is formalized in the EU 2020 climate and energy package. The legislative package regulates emissions of CO₂, CH₄, N₂O, HFCs, PFCs and SF₆ using GWP values from the AR4 to aggregate the GHG emissions of the EU until 2020. Emissions and removals from the LULUCF sector are not included in the quantified economy-wide emission reduction target under the Convention. The EU generally allows its member States to use units from the Kyoto Protocol mechanisms for compliance purposes, subject to a number of restrictions in terms of origin and type of project and up to an established limit. Operators and airline operators can use such units to fulfil their requirements under the EU ETS, and member States can use such units for their national ESD targets, within specific limitations.

14. The EU 2020 climate and energy package includes the EU ETS and the ESD (see paras. 25–26 below). The EU ETS covers mainly point emissions sources in the energy, industry and aviation sectors. An EU-wide emission cap has been put in place for 2013–2020 with the goal of reducing emissions by 21 per cent below the 2005 level by 2020. For 2030, a reduction target of 43 per cent below the 2005 level has been set for emissions covered by the EU ETS. Emissions from ESD sectors are regulated through member State specific targets that add up to a reduction at the EU level of 10 per cent below the 2005 level by 2020.

15. The United Kingdom has a national target of reducing its total emissions to 16 per cent below the 2005 level by 2020 for ESD sectors. This target has been translated into binding quantified AEAs for 2013–2020. The United Kingdom's AEAs change following a path from 358,741.70 kt CO₂ eq in 2013 to 350,926.22 kt CO₂ eq in 2020.⁴

16. In addition to its ESD target, the United Kingdom committed to achieving a domestic target of a 34 per cent reduction in emissions below the 1990 level by 2020. In its NDC under the Paris Agreement, the United Kingdom committed to reducing economy-wide GHG emissions by at least 68 per cent below the 1990 level by 2030. In April 2021, the Government of the United Kingdom laid down legislation for its sixth carbon budget, which will require GHG emissions to be reduced by 78 per cent by 2035 compared with the 1990 level. The level was set in line with the latest science as recommended by the United

⁴ According to the EU transaction log.

Kingdom’s Climate Change Committee. The 2008 Climate Change Act sets a domestic target of reducing emissions by 80 per cent below the 1990 level by 2050. In June 2019, the 2008 Climate Change Act was amended to commit the United Kingdom to achieving net zero GHG emissions by 2050 using the carbon budgeting approach (see para. 60 below). Ahead of the twenty-sixth session of the Conference of the Parties in November 2021, the United Kingdom will publish a comprehensive net zero strategy, setting out the Government’s vision for transitioning to a net zero economy by 2050 while taking advantage of new growth and employment opportunities across the country. The strategy will constitute the United Kingdom’s revised long-term low-emission development strategy to the UNFCCC.

17. The Party reported in its BR4 (p.35) that its EU target applies only to the United Kingdom and, among its overseas territories, only to Gibraltar. The ERT noted that details of the targets concerning Gibraltar in particular are not transparently described in the BR4. During the review, the Party explained that the United Kingdom’s ratification of the second commitment period of the Kyoto Protocol extends to the United Kingdom’s overseas territories of the Cayman Islands, the Falkland Islands (Malvinas) and Gibraltar and provided additional information showing that, according to its 2019 Climate Change Act, Gibraltar has emission reduction targets of at least 42 and 100 per cent below the baseline level by 2030 and 2045, respectively. The ERT notes that reporting on the long-term targets for the United Kingdom’s overseas territories and Crown dependencies will help to enhance the transparency of the Party’s reporting.

2. Assessment of adherence to the reporting guidelines

18. The ERT assessed the information reported in the BR4 of the United Kingdom and identified an issue relating to transparency and thus adherence to the UNFCCC reporting guidelines on BRs. The finding is described in table 3.

Table 3

Findings on the assumptions, conditions and methodologies related to the quantified economy-wide emission reduction target from the review of the fourth biennial report of the United Kingdom

No.	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation</i>
1	Reporting requirement specified in paragraph 5 Issue type: transparency Assessment: recommendation	The Party reported no information on the possible scale of contribution of other market-based mechanisms in CTF table 2(e)II without explaining why such information was not reported. The ERT noted that the Party reported such contributions as “0” in the textual part of the BR4 (p.104, table 2(c)). During the review, the Party acknowledged the error in CTF table 2(e)II and explained that it should contain a “0” value consistently with table 2(c) of the BR4. The ERT recommends that the United Kingdom improve the transparency of its reporting by consistently reporting information on other market-based mechanisms in CTF table 2e(II) and the textual part of the BR, clearly explaining in the BR and/or CTF table 2(e)II if no information was reported (e.g. using a footnote and/or notation keys). The ERT notes that “NA” could be reported in cases where the Party does not plan to use units from other market-based mechanisms, and the value “0” when it intends to use units from other market-based mechanisms but does not use units in a given year.

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

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

1. Mitigation actions and their effects

(a) Technical assessment of the reported information

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

20. The United Kingdom's set of PaMs is similar to that previously reported, except for the addition of several new PaMs (Boiler Plus, Streamlined Energy and Carbon Reporting Framework for Business, and Industrial Heat Recovery Support). The United Kingdom also provided information on changes since its previous submission to its institutional, legal, administrative and procedural arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of progress towards its target. BEIS is the entity responsible for strategic oversight of climate and energy policy across the United Kingdom. Although climate change policy is devolved to Wales, Scotland and Northern Ireland, the United Kingdom Government retains control over policy areas that deliver emission reductions. The establishment of the Cabinet Committee on Climate Change was announced in October 2019, to be chaired by the Prime Minister with the aim of bringing together ministers responsible for domestic and international climate change policy. In March 2019, the devolved Government of Wales published its low-carbon delivery plan, Prosperity for all: A Low Carbon Wales, and, since declaring a climate emergency, has established a permanent subcommittee at the ministerial level to promote decarbonization. Regarding the process of monitoring and evaluating the effectiveness of its PaMs, the United Kingdom Government measures its performance against carbon budgets (see para. 60 below) through data contained in the Party's GHG inventory, including emissions from LULUCF. The data are then adjusted to take into account removals from the atmosphere by carbon sinks associated with LULUCF activities.

21. In its reporting on its PaMs, the United Kingdom provided the estimated emission reduction impacts for many of its PaMs. Where estimated impacts were not provided, the Party supplied explanations for groups of PaMs. The Party explained that estimated impacts were not provided for some PaMs because, in most cases, they were included in the baseline projections. In the case of the waste sector, the Party explained that the estimated mitigation impacts of new measures will be included in its next submission. Additionally, the United Kingdom estimated the impacts of some of its PaMs in groups. The Party explained during the review that in some cases impacts were estimated for groups of PaMs because the impacts of certain individual policies are particularly difficult to estimate (e.g. forestry policies).

22. The United Kingdom reported on its self-assessment of compliance with emission reduction targets and national rules for taking action against non-compliance. The 2008 Climate Change Act introduced carbon budgets, which cap emissions over successive five-year periods and are set 12 years in advance. The first five carbon budgets cover 2008–2032, with the sixth carbon budget due to be set by mid-2021 (see para. 60 below). In accordance with the 2008 Climate Change Act, the Climate Change Committee is required to present annually to Parliament an assessment report on progress against the carbon budgets and the 2050 target. The Government of the United Kingdom is required to respond to this assessment by the end of October each year. Two years after the end of each carbon budget period, the report prepared by the Climate Change Committee also assesses how the United Kingdom performed with respect to its last carbon budget. In October 2019, the United Kingdom announced the establishment of the Cabinet Committee on Climate Change, to be chaired by the Prime Minister, the primary function of which is to drive action to reduce emissions and improve air quality by holding government departments accountable for actions to combat climate change. Furthermore, the Clean Growth Strategy sets out possible pathways for meeting the carbon budgets.

23. The key overarching related cross-sectoral policy in the EU is the 2020 climate and energy package, adopted in 2009, which includes the revised EU ETS and the ESD.

24. The achievement of the Energy Union objectives and targets is ensured through a combination of Energy Union initiatives and national policies set out in integrated NECPs. The NECPs are periodically updated to reflect changes to EU policy. The United Kingdom's draft NECP focuses on domestic climate targets and is based on existing energy and climate policy documents, notably the Clean Growth Strategy up until 2050.

25. In operation since 2005, the EU ETS is a cap-and-trade system that covers all significant energy-intensive installations (mainly large point emissions sources such as power plants and industrial facilities), which produce 40–45 per cent of the GHG emissions of the EU. It is expected that the EU ETS will guarantee that the 2020 target (a 21 per cent emission reduction below the 2005 level) will be achieved for sectors under the scheme. The third phase of the EU ETS started in 2013 and the system now includes aircraft operations (since 2012), as well as N₂O emissions from chemical industry, PFC emissions from aluminium production and CO₂ emissions from some industrial processes that were not covered in the previous phases of the EU ETS (since 2013). Auctioning is the default method for allocating allowances; however, harmonized rules for free allocations, based on benchmark values achieved by the most efficient 10 per cent of installations, are still in place as a safeguard for the international competitiveness of industrial sectors at risk of carbon leakage. The fourth phase of the EU ETS, planned for 2021–2030, will not apply to the United Kingdom given its departure from the EU. The United Kingdom Emissions Trading Scheme came into force on 1 January 2021.

26. The ESD became operational in 2013 and covers transport (excluding domestic and international aviation, and international maritime transport), residential and commercial buildings, agriculture and waste, together accounting for 55–60 per cent of the GHG emissions of the EU. The ESD includes binding annual targets for each member State for 2013–2020.

27. The United Kingdom introduced national-level policies to achieve its targets under the ESD and domestic emission reduction targets. The key policies reported are related to energy supply, energy efficiency and fuel consumption efficiency. The mitigation effect of the New Energy Supply policies, the Building Regulations, the EU directive on the energy performance of buildings, and car fuel efficiency policies implementing EU regulations on biofuel use and energy efficiency in road transportation are the most significant. Other policies that have delivered significant emission reductions are the Energy Efficiency Commitment and Carbon Emissions Reduction Target, the EU ecodesign directive and the EU energy labelling framework regulation (all of which address energy efficiency), the EU F-gas regulation and the Agricultural Action Plan. The ERT identified the domestic energy supply and energy efficiency policies as mitigation actions of particular interest because they complement and exceed the targets at the EU level. These include the Carbon Price Floor, which sets a minimum carbon price for the electricity generated from fossil fuels, in the form of a carbon tax, which is higher than the price for the EU allowance on the EU ETS market; the Renewables Transport Fuel Obligation, succeeded by the Contracts for Difference (2014–2020) policy, which promotes a fuel switch in electricity generation; the Climate Change Levy, which promotes energy efficiency in the business and public sectors; and the Energy Efficiency Commitment, succeeded by the Carbon Emissions Reduction Target, which obliges electricity and gas suppliers to incentivize a reduction in energy demand among domestic customers.

28. The United Kingdom highlighted the domestic mitigation actions that are under development, such as the planned extensions to the Contracts for Difference; the Energy Performance of Buildings Directive; Cost Optimal Review and Nearly Zero Energy Buildings; and Amendments to Heat Networks Metering and Billing Regulations. Table 4 provides a summary of the reported information on the PaMs of the United Kingdom.

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

<i>Sector</i>	<i>Key PaMs</i>	<i>Estimate of mitigation impact in 2020 (kt CO₂ eq)</i>	<i>Estimate of mitigation impact in 2035 (kt CO₂ eq)</i>
Policy framework and cross-sectoral measures	EU ETS	NE	NE
	ESD	NE	NE
Energy			
Energy efficiency	EU energy efficiency directive	NE	NE
	EU energy performance of buildings directive and Building Regulations	15 650.87	6 867.09
	Energy Efficiency Commitment and Carbon Emissions Reduction Target	4 429.15	3 510.62
	EU ecodesign directive and EU energy labelling framework regulation	4 286.27	1 324.96
	Smart Metering	1 483.86	1 547.73
	Carbon Reduction Commitment	936.31	0.00
Energy supply and renewables	New Energy Supply policies consisting of the Carbon Floor Price (to the EU ETS), Contracts for Difference (succeeding the Renewables Transport Fuel Obligation), the Capacity Mechanism and the EU large combustion plants directive, complemented by the EU industrial emissions directive	50 059.28	69 264.92
	Climate Change Levy	NE	NE
	EU renewable energy directive and EU renewable energy directive II	NE	NE
Transport	EU renewable energy directive, EU directive on reducing indirect land-use change and Renewables Transport Fuel Obligation	5 668.40	6 291.56
	Passenger car fuel efficiency policies, including the EU regulation on reducing CO ₂ emissions from light-duty vehicles and EU regulation on the rolling resistance of tyres and national measures to promote ultra-low-emission vehicles	4 182.09	20 587.66
	Van fuel efficiency policies, including the EU regulation on fuel efficiency targets and EU regulation on rolling resistance of tyres and national measures to promote ultra-low-emission vehicles	1 605.06	4 093.85
	Fuel efficiency policies for heavy goods vehicles, including the EU regulation on the rolling resistance of tyres and national policies promoting modal shift	475.57	1 011.73
IPPU	EU F-gas regulation	3 533.29	12 980.05
	Ozone-depleting substances regulation	NE	NE
Agriculture	Agricultural Action Plan	2 602.57	3 974.00
	Nitrates Action Plan	NE	NE
	EU common agricultural policy and the greening support scheme	NE	NE
LULUCF	EU LULUCF regulation	NE	NE
	Forestry policies, including the Woodland Carbon Code, Rural Development Programme, Woodfuel Implementation Plan, Woodland Carbon Fund, Woodland Creation Planning Grant, Revised UK	-149.88	106.64

Sector	Key PaMs	Estimate of mitigation impact in 2020 (kt CO ₂ eq)	Estimate of mitigation impact in 2035 (kt CO ₂ eq)
Waste	Forestry Standard, Grown in Britain, Forestry Act Felling Licence Regulations and Environmental Impact (Forestry) Regulations		
	EU landfill directive	NE	NE
	Landfill tax	NE	NE
	Enhanced recycling, reduced landfilling, demand management/reduction, enhanced CH ₄ collection and use, improved waste treatment technologies, improved landfill management, and waste incineration with energy use	NE	NE

Note: The estimates of mitigation impact are estimates of emissions of CO₂ eq avoided in a given year as a result of the implementation of mitigation actions.

29. As mentioned in its BR4, the United Kingdom has implemented additional PaMs since its BR3. However, the ERT noted that the new PaMs were not identified in the BR4 or in CTF table 3. During the review, the United Kingdom identified the new measures as Boiler Plus, Streamlined Energy and Carbon Reporting Framework for Business, and Industrial Heat Recovery Support.

30. The ERT noted that the names and descriptions of the mitigation actions reported in CTF table 3 did not enable a comparison of the mitigation actions reported in the BR4 with those reported in the previous submission. For example, it was not clear whether and how the mitigation actions Sustainable Energy-Using Products – Post-Low Carbon Transition Plan, Sustainable Energy-Using Products – Pre-Low Carbon Transition Plan, and Sustainable Energy-Using Products – Implemented reported in the BR4 corresponded to the mitigation actions Sustainable Energy-Using Products – Implemented and Products Policy (Adopted) reported in the BR3. During the review, the Party explained which actions reported in CTF table 3 corresponded to those reported in the previous submission.

31. The ERT noted that for two mitigation actions in the transport sector (van fuel efficiency policies and Renewables Transport Fuel Obligation – Increase target to meet Renewable Energy Directive) and one mitigation action in the energy sector (Renewable Heat Incentive), the mitigation impacts reported in CTF table 3 deviated significantly from the impacts reported in the previous submission. During the review, the Party explained that specific changes have been made in the modelling assumptions used, which led to the changes in the impacts reported.

(b) Policies and measures in the energy sector

32. **Energy efficiency.** The United Kingdom’s energy efficiency policy goes beyond the EU energy policy in terms of targets, sectors and instruments for achievement, and includes both the public and private sectors. The energy efficiency regulatory framework is driven by the EU energy efficiency directive (directive 2012/27/EU) and the EU energy performance of buildings directive (directive 2010/31/EU); however, the United Kingdom has further enhanced and adapted the requirements under these directives through domestic instruments, including the Energy Efficiency Commitment and Carbon Emissions Reduction Target, the Carbon Reduction Commitment Energy Efficiency Scheme and the new measures adopted since the BR3, namely the Boiler Plus technical standards, the Streamlined Energy and Carbon Reporting Framework for Business, and Industrial Heat Recovery Support. Energy efficiency PaMs targeting individual sectors are discussed below.

33. **Energy supply and renewables.** The energy sector was the main source of GHG emissions in the United Kingdom from 1990 to 2015. However, since 2016, emissions from energy supply have fallen below the emissions of the transport sector. Energy emissions declined by nearly 59 per cent between 1990 and 2017, while the share of energy supply emissions in total GHG emissions fell from nearly 35 to 25 per cent in the same period. A major driver of those emission reductions was the restructuring of the electricity supply

industry in the 1990s, including switching from coal and oil to gas for electricity generation. Although there was an increase in emissions from electricity generation in the early 2000s owing to an intermediate switch back to coal due to volatile and high gas prices, there has been a significant decrease in emissions since then stemming from the phasing out of coal. Major EU-wide instruments supporting the reduction in emissions are the EU ETS, the EU renewable energy directive (directive 2009/28/EC) (recast as the EU renewable energy directive II (directive 2018/2001/EU) in 2018) and the EU large combustion plants directive (directive 2001/80/EC). The range of domestic measures addressing energy supply and renewable energy includes the Contracts for Difference, which replaced the Renewables Transport Fuel Obligation, in combination with Additional Renewables in Generation (Renewable Energy Strategy); feed-in tariffs; the Carbon Price Floor supporting the EU ETS; and the Capacity Mechanism for the electricity market, implemented since 2017. In addition to the switch from coal and oil to gas and renewables, the United Kingdom's energy supply policies include measures supporting the use of nuclear energy, as part of the Contracts for Difference.

34. **Residential and commercial sectors.** GHG emissions in the residential sector decreased by nearly 16 per cent from 1990 to 2017. The stronger trend towards decarbonization in energy supply led to an increase in the share of residential sector emissions in total GHG emissions from nearly 10 to 14 per cent in that period. Key drivers of the reduction in GHG emissions were the United Kingdom's energy efficiency policies, which offset the growth in demand for residential energy services such as heating or hot water. Key policies targeting the residential sector include the EU energy performance of buildings directive in combination with the domestic Building Regulations, the Warm Front investment support programme and the Boiler Plus technical standards. The Renewable Heat Incentive is a financial incentive to promote the use of renewable heat in the residential sector. In addition, energy suppliers are obligated to deliver energy-efficient measures to households via the Carbon Emissions Reduction Target and the Energy Companies Obligation. Reductions in residential energy consumption, including electricity consumption, were triggered by the EU codesign directive (directive 2009/125/EC) and the EU energy labelling framework regulation (regulation 2017/1369). Furthermore, the Smart Metering programme assists the move towards smart grids which support sustainable energy supply and will help to reduce the total energy needed by the system.

35. Public sector GHG emissions decreased by 38 per cent from 1990 to 2017. The share of public sector emissions in total GHG emissions remained stable at about 2 per cent during that period. The main policies promoting the fuel switch away from coal and oil and increased energy efficiency are the Carbon Reduction Commitment Energy Efficiency Scheme, which is a mandatory carbon emission reduction scheme that applies to large energy-intensive organizations in the public and private sectors, and the Climate Change Levy, which is a carbon tax that is added to the electricity and fuel bills of business and public sector consumers. The United Kingdom assigns emissions from the commercial sector to the "business sector" (see para. 36 below).

36. **Industrial sector.** GHG emissions from energy use in the industrial/business sector decreased by nearly 30 per cent between 1990 and 2017. The sector's share of emissions in total GHG emissions increased from 14 to 17 per cent in that period. Key policies affecting energy use in industry overlap with those for energy supply and the public sector, namely the EU ETS, which is supported by the Carbon Floor Price, the EU large combustion plants directive, the Carbon Reduction Commitment, the Climate Change Levy and the Renewable Heat Incentive. As a measure specific to the industrial sector, Climate Change Agreements offer participating energy-intensive industries a discount on the Climate Change Levy in return for meeting emission reduction targets.

37. **Transport sector.** The transport sector did not contribute significantly to the United Kingdom's overall emission reductions. GHG emissions for the transport sector decreased by nearly 2 per cent between 1990 and 2017. In 2016, the transport sector overtook the energy supply sector to become the United Kingdom's main source of GHG emissions. The share of transport in overall GHG emissions increased from nearly 16 per cent in 1990 to nearly 27 per cent in 2017. Road transport is the most significant source of emissions in this sector. Key drivers of the observed emission trend are an increase in both the number of passenger

vehicles and the vehicle kilometres travelled, which are counterbalanced by an increase in vehicle efficiency, resulting in lower petrol consumption that outweighs the increase in diesel consumption. Key EU-wide measures for the transport sector include fuel efficiency targets set out in the EU regulation on emission performance standards for new passenger cars (regulation 443/2009), the EU regulation on performance standards for light commercial vehicles (regulation 510/2011) and the EU regulation on minimum requirements and labelling for the rolling resistance of tyres (regulation 661/2009). The EU renewable energy directive (recast as the EU renewable energy directive II), amended by the EU directive on reducing indirect land-use change (directive 2015/2013), sets targets for biofuel use by diesel and petrol suppliers, implemented in the United Kingdom through the Renewables Transport Fuel Obligation.

38. The United Kingdom's measures to support the uptake of ultra-low-emission vehicles include the plug-in car and plug-in van grants, as well as various tax incentives including lower rates for vehicle excise duty and company car tax. Infrastructure for electric vehicles is directly supported through the Workplace Charging Scheme grants to install charging points for employees and fleets, the Electric Vehicle Homecharge Scheme grants for installing residential vehicle charging points and the On-street Residential Charging Scheme. Funds have also been committed to ensure that electric vehicle charging points are available at an interval of every 20 miles on the strategic road network.

39. The United Kingdom's actions to reduce freight emissions include the Freight Transport Association's Logistics Carbon Reduction Scheme, which encourages members to record, report and reduce emissions from freight. The Mode Shift Revenue Support scheme encourages the modal shift from roads to railways or inland waterways. A similar scheme, the Waterborne Freight Grant, provides assistance with the operating costs associated with coastal or short sea shipping.

(c) **Policies and measures in other sectors**

40. **Industrial processes.** GHG emissions from industrial processes decreased by nearly 82 per cent between 1990 and 2017. The industrial processes sector shows the largest emission reductions in relative terms. The sector's share in total GHG emissions decreased from nearly 8 to 2 per cent between 1990 and 2017. The largest reductions in this sector result from the EU F-gas regulation (regulation 517/2014), which introduced a 79 per cent phase-down in the quantities of HFCs that can be placed on the EU market. It aims to achieve this by gradually reducing quotas for F-gas producers and importers.

41. **Agriculture.** GHG emissions for the agriculture sector decreased by nearly 15 per cent between 1990 and 2017. The share of agriculture sector emissions in total GHG emissions increased from nearly 7 to 10 per cent in that period. The main policy reported by the United Kingdom is the Agricultural Action Plan, which covers a range of measures focusing on resource efficiency and land management, including reducing fertilizer/manure use on cropland, improving animal waste management systems, improving livestock management, improving grazing land or grassland management and improving management of organic soils. Other key measures include the Nitrates Action Plan to reduce nitrate pollution to water and the application of the greening support scheme under the EU common agricultural policy.

42. **LULUCF.** The LULUCF sector contributed only marginally to total GHG emissions in 1990 but had developed into a net sink of approximately 10 Mt CO₂ eq per year by 2017, equivalent to nearly 2 per cent of total net GHG emissions. The main PaMs targeting this sector are forestry policies aimed at driving afforestation and reforestation, which are based on voluntary agreements. The ERT noted that the Party included information in its BR4 on new measures related to peatland to enhance the transparency of its reporting following the recent use of the *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands* in the preparation of the GHG inventory. However, the Party did not report estimates of the impacts of those mitigation actions owing to the lack of a methodology to estimate them.

43. **Waste management.** Waste sector GHG emissions decreased by nearly 69 per cent between 1990 and 2017. The share of emissions from waste management in total GHG

emissions decreased from nearly 8 per cent in 1990 to 5 per cent in 2017. A number of measures have been implemented in the waste sector aimed at reducing and separating waste, regulating waste disposal in landfills, improving collection and use of CH₄ from landfills, improving waste treatment and landfill management technologies, and promoting waste incineration and energy use. The EU waste framework directive (directive 2008/98/EC) provides the general framework for waste management in the United Kingdom and sets rules governing the separate collection of waste. The EU landfill directive (directive 1999/31/EC) sets rules governing the disposal of waste to landfill and the domestic landfill tax is an escalating tax on biodegradable waste. Additional waste measures targeting other waste streams include the EU waste incineration directive (directive 2000/76/EC), which promotes waste incineration and energy use.

(d) Response measures

44. The United Kingdom’s initiatives aimed at minimizing adverse impacts include the Powering Past Coal Alliance between the United Kingdom and Canada aimed at accelerating the pace of the transition from coal-fired power generation internationally; and supporting countries to develop their 2050 emission reduction pathways, including the just transition to a net zero economy. In promoting just transition globally, the Powering Past Coal Alliance created a Just Transition Task Force whose aim is to engage major coal users such as South Africa by sharing best practices on just transition and offering practical solutions to address barriers to just transition. The Party’s initiatives in this regard also include the 2050 Calculator, a tool developed by the United Kingdom which can be used to determine emission reduction pathways to reduce GHG emissions in a way that tackles energy challenges and minimizes negative impacts associated with energy transition. A few countries such as Colombia, India, Nigeria and Viet Nam have already used the 2050 Calculator to inform the development of their NDCs under the Paris Agreement. Other countries, such as South Africa, have used the 2050 Calculator as a tool to encourage public participation and stakeholder engagement in long-term emission reduction options.

(e) Assessment of adherence to the reporting guidelines

45. The ERT assessed the information reported in the BR4 of the United Kingdom and identified issues relating to completeness and transparency and thus adherence to the UNFCCC reporting guidelines on BRs. The findings are described in table 5.

Table 5
Findings on mitigation actions and their effects from the review of the fourth biennial report of the United Kingdom

No.	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
1	<p>Reporting requirement specified in paragraph 6</p> <p>Issue type: transparency</p> <p>Assessment: recommendation</p>	<p>The Party provided in its BR4 an extensive list of mitigation actions. However, in a few cases, the names and descriptions of the mitigation actions did not allow the ERT to distinguish between them. For example, the mitigation actions Sustainable Energy-Using Products – Post-Low Carbon Transition Plan, Sustainable Energy-Using Products – Pre-Low Carbon Transition Plan and Sustainable Energy-Using Products – Implemented have identical descriptions. Further, the Party did not specify the geographical scope of the reported mitigation actions and their impacts.</p> <p>During the review, the Party explained the specific differences between the above-mentioned mitigation actions. The Party also explained that the geographical scope of quantified mitigation impacts is the United Kingdom, which encompasses England, Scotland, Wales and Northern Ireland, but does not include the overseas territories and Crown dependencies. The Party further explained that the geographical scope of the EU-wide policies included in the list of mitigation actions includes Gibraltar in addition to the United Kingdom.</p> <p>The ERT recommends that the United Kingdom enhance the transparency of its reporting by providing specific descriptions in the BR for all reported mitigation actions, clearly distinguishing between those with similar names, and by explaining the geographical scope of all mitigation actions.</p>

No.	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
2	<p>Reporting requirement specified in CTF table 3</p> <p>Issue type: completeness</p> <p>Assessment: recommendation</p>	<p>The Party did not report the mitigation impacts of some of the PaMs listed in CTF table 3 or explain why they were not provided either in the BR4 and/or in CTF table 3.</p> <p>During the review, the Party explained that it was not possible to quantify mitigation impacts for all mitigation actions owing to methodological challenges specific to some of the mitigation actions.</p> <p>The ERT recommends that the United Kingdom enhance the completeness of its reporting by providing the mitigation impacts of all mitigation actions or explaining in the BR and/or CTF table 3 (e.g. using a footnote and/or appropriate notation keys such as “NE”) why this is not possible owing to its national circumstances.</p>
3	<p>Reporting requirement specified in CTF table 3</p> <p>Issue type: transparency</p> <p>Assessment: recommendation</p>	<p>The Party reported an extensive list of mitigation actions in CTF table 3. However, the Party:</p> <p>(a) Reported negative mitigation impacts in CTF table 3 for some years of the me series for three mitigation actions (forestry policies, Sustainable Energy-Using roducts – Pre-Low Carbon Transition Plan and Heat Networks Investment roject);</p> <p>(b) Reported two overlapping mitigation actions with almost identical descriptions in CTF table 3 (Public Sector Energy Efficiency Loans Scheme – 2014–2015 and Public Sector Energy Efficiency Loans Scheme – 2014–2020) and did not explain why they were provided separately.</p> <p>During the review, the Party explained that:</p> <p>(a) Negative values were reported for the mitigation impacts of forestry policies because they may lead to higher emissions in the initial years of implementation and actual emission reductions may only be expected in later years. However, for the Sustainable Energy-Using Products – Pre-Low Carbon Transition Plan and Heat Networks Investment Project for which negative mitigation impacts were reported for some years, the Party acknowledged an error in the underlying assessment methodology in the former case and a typographical error in the latter;</p> <p>(b) The mitigation action Public Sector Energy Efficiency Loans Scheme – 2014–2020 encompasses the mitigation action Public Sector Energy Efficiency Loans Scheme – 2014–2015 and the mitigation impact reported for the latter is thus included in the mitigation impact reported for the former and, as such, was reported separately by mistake.</p> <p>The ERT recommends that the United Kingdom enhance the transparency of its reporting by reporting correct information on the impacts of its mitigation actions in CTF table 3 and by ensuring that mitigation actions and the impacts reported for them are not reported more than once.</p>
4	<p>Reporting requirement specified in CTF table 3</p> <p>Issue type: completeness</p> <p>Assessment: encouragement</p>	<p>The Party did not report information on the cost of the mitigation actions and the relevant timescale in CTF table 3 as indicated in footnote (e) to the table.</p> <p>During the review, the United Kingdom explained that it publishes impact assessments for all new domestic mitigation policies, which include estimated cost implications. The Party provided a list of web references for the published impact assessments undertaken for all mitigation actions reported in CTF table 3, where available. On the basis of those impact assessments, the Party also provided an overview of the annual cost to business for all mitigation actions reported in CTF table 3, where available.</p> <p>The ERT reiterates the encouragement from the previous report for the Party to improve the completeness of its reporting by including information on the cost and relevant timescale of the mitigation actions in CTF table 3.</p>
5	<p>Reporting requirement specified in paragraph 24</p> <p>Issue type: transparency</p>	<p>The Party provided information in the BR4 (section 4.2) on the domestic institutional arrangements established for the process of the self-assessment of compliance with its emission reduction commitments or the level of emission reduction required by science, and on progress in establishing national rules for the Governments of the United Kingdom, Wales and Scotland and the Northern</p>

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation or encouragement
Assessment: encouragement	<p>Ireland Executive on taking local action against domestic non-compliance. However, the ERT noted that the Party did not explain such arrangements for the overseas territories and Crown dependencies.</p> <p>During the review, the Party explained that although it collects emissions inventory data from the Crown dependencies and overseas territories, it did not previously collect information on how they reduce their emissions. Officials from the United Kingdom Government are in consultation with the Crown dependencies and overseas territories on the possibility of extending the United Kingdom's ratification of the Paris Agreement to them, in accordance with domestic treaty extension processes. As part of that process, the Crown dependencies and overseas territories would be required to provide reporting information in line with the relevant decisions of the Paris Agreement, in line with their institutional capacities.</p> <p>The ERT encourages the Party to enhance the transparency of its reporting by providing in the BR, to the extent possible, information on its self-assessment of compliance with its emission reduction commitments or the level of emission reduction required by science, and on progress in establishing national rules for taking local action against domestic non-compliance by the Crown dependencies and overseas territories. The ERT notes that such information could include and build on the information provided to the ERT during the review.</p>	

Note: Item listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on BRs or to the CTF table number from the "Common tabular format for 'UNFCCC biennial reporting guidelines for developed country Parties'". The reporting on the requirements not included in this table is considered to be complete, transparent and thus adhering to the UNFCCC reporting guidelines on BRs.

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

(a) Technical assessment of the reported information

46. The United Kingdom does not intend to use units from market-based mechanisms under the Kyoto Protocol and other market-based mechanisms under the Convention to meet its commitment under the ESD. It reported in CTF tables 4 and 4(b) that it did not use any units from market-based mechanisms in 2016 or 2017. Given that the contribution of LULUCF activities is not included in the joint EU target under the Convention, the reporting of contributions of LULUCF activities is not applicable for the United Kingdom. Table 6 illustrates the United Kingdom's ESD emissions and use of units from market-based mechanisms for achieving its ESD target.

Table 6

Summary of information on the use of units from market-based mechanisms by the United Kingdom for achieving its target

Year	ESD emissions (kt CO ₂ eq)	AEA (kt CO ₂ eq)	Use of units from market-based mechanisms (kt CO ₂ eq) ^a	Annual AEA surplus/deficit (kt CO ₂ eq)	Cumulative AEA surplus/deficit (kt CO ₂ eq)
2013	339 450.36	358 741.70	NA	19 291.34	19 291.34
2014	324 444.71	354 221.31	NA	29 776.60	49 067.94
2015	326 027.91	349 700.91	NA	23 673.00	72 740.94
2016	333 899.78	345 180.52	NA	11 280.75	84 021.69
2017	332 050.82	360 408.96	NA	28 358.13	112 379.82
2018	329 880.41	357 248.04	NA	27 367.64	139 747.46

Sources: The United Kingdom's BR4 and BR4 CTF table 4(b) and the EU transaction log (AEAs).

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

^a "NA" indicates that the Party stated in its BR4 that it does not intend to use market-based mechanisms for achieving its target.

47. In assessing the progress towards achieving the 2020 joint EU target, the ERT noted that the United Kingdom’s emission reduction target for the ESD is 16 per cent below the base-year level (see para. 15 above). In 2018, the United Kingdom’s ESD emissions were 7.7 per cent (27,367.64 kt CO₂ eq) below the AEA. The United Kingdom has a cumulative surplus of 139,747.46 kt CO₂ eq with respect to its AEAs between 2013 and 2018.

48. The ERT noted that the United Kingdom is making progress towards its ESD target by implementing mitigation actions that are delivering significant emission reductions.

(b) Assessment of adherence to the reporting guidelines

49. The ERT assessed the information reported in the BR4 of the United Kingdom and identified an issue relating to transparency and thus adherence to the UNFCCC reporting guidelines on BRs. The finding is described in table 7.

Table 7

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

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation
1	Reporting requirement specified in paragraph 10 Issue type: transparency Assessment: recommendation	<p>The United Kingdom reported in CTF table 4 the total amount of assigned amount units retired as part of the compliance procedure for the first commitment period of the Kyoto Protocol for 2015, even though it does not intend to make use of units from market-based mechanisms to meet its quantified economy-wide emission reduction target under the Convention.</p> <p>During the review, the Party explained that the units reported in CTF table 4 for 2015 reflect units retired from the United Kingdom’s national registry in order to comply with its economy-wide emission reduction target for the first commitment period of the Kyoto Protocol. However, these units have not been considered for the assessment of its progress against its economy-wide emission reduction target for the second commitment period. The ERT noted that this information is not relevant for assessing the United Kingdom’s progress towards the achievement of its quantified economy-wide emission reduction target under the Convention.</p> <p>The ERT recommends that the Party enhance the transparency of its reporting by reporting in CTF table 4 the actual amount of units from market-based mechanisms used towards the achievement of its quantified economy-wide emission reduction target under the Convention or by clearly explaining why no information is reported (e.g. using a footnote and/or notation keys). The ERT notes that “NA” could be reported for cases where the Party does not plan to use units from market-based mechanisms, and the value “0” when it intends to use units from market-based mechanisms but does not use units in a given year.</p>

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

3. Projections overview, methodology and results

(a) Technical assessment of the reported information

50. The United Kingdom reported updated projections for 2020 and 2030 relative to actual inventory data for 2016 under the WEM scenario. The WEM scenario reported by the United Kingdom includes PaMs implemented and adopted until 2018.

51. In addition to the WEM scenario, the United Kingdom reported the WAM scenario. The WAM scenario includes planned PaMs. The United Kingdom provided a definition of its scenarios, explaining that its WEM scenario includes implemented and adopted policies such as the Building Regulations and the Energy Efficiency Commitment and Carbon Emissions Reduction Target, while its WAM scenario includes planned policies. The definitions indicate that the scenarios were prepared in accordance with the UNFCCC reporting guidelines on BRs.

52. The projections are presented on a sectoral basis, using the same sectoral categories as those used in the reporting on mitigation actions, and on a gas-by-gas basis for CO₂, CH₄, N₂O, PFCs, HFCs and SF₆ (treating PFCs and HFCs collectively in each case) for 2020–2035. The projections are also provided in an aggregated format for each sector and for a Party total using GWP values from the AR4. The United Kingdom reported on factors and activities affecting emissions for each sector.

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

53. The overall methodology used for the preparation of the projections is identical to that used for the preparation of the emission projections for the NC7. The United Kingdom provided information on the changes since the submission of its NC7 in the assumptions, methodologies, models and approaches used for the projection scenarios. The main differences between the two projections include incorporating additional implemented and adopted policies, re-estimating the impact of some policies, improving the modelling methodology, and revising fossil fuel price and economic growth assumptions to reflect the latest available national and international forecasts.

54. To prepare its projections, the United Kingdom relied on key underlying assumptions relating to the GDP growth rate, population growth, household growth, fossil fuel prices (crude oil, gas and coal), the EU ETS carbon price, the electricity generation carbon price (which includes the Carbon Price Support Levy) and exchange rates (pounds sterling to United States dollars and pounds sterling to euros). These variables and assumptions were reported in CTF table 5. In most cases, they are publicly available forecasts developed by the United Kingdom’s Office for Budget Responsibility and Office for National Statistics, which are supplemented by International Monetary Fund projections of world economic growth. The assumptions were updated on the basis of the most recent economic developments known at the time of the preparation of the projections. Projections were prepared by combining the projection estimates for England, Scotland, Wales and Northern Ireland.

55. Sensitivity analyses were conducted for a number of scenarios corresponding to low and high fossil fuel prices and low and high GDP growth rates. As a result, it is projected that, in 2020, the United Kingdom’s GHG emissions will be between 47 and 52 per cent below the 1990 level, with the central estimate 50 per cent below the 1990 level. For 2030, it is projected that the United Kingdom’s GHG emissions will be between 51 and 57 per cent below the 1990 level, with the central estimate 55 per cent below the 1990 level. The lowest emission reductions correspond to a low fossil fuel price and high GDP growth scenario, while the highest emission reductions are expected to occur under a scenario of high fossil fuel prices and low GDP growth.

(c) Results of projections

56. The projected emission levels under different scenarios and information on the quantified economy-wide emission reduction target are presented in table 8 and figure 1.

Table 8

Summary of greenhouse gas emission projections for the United Kingdom

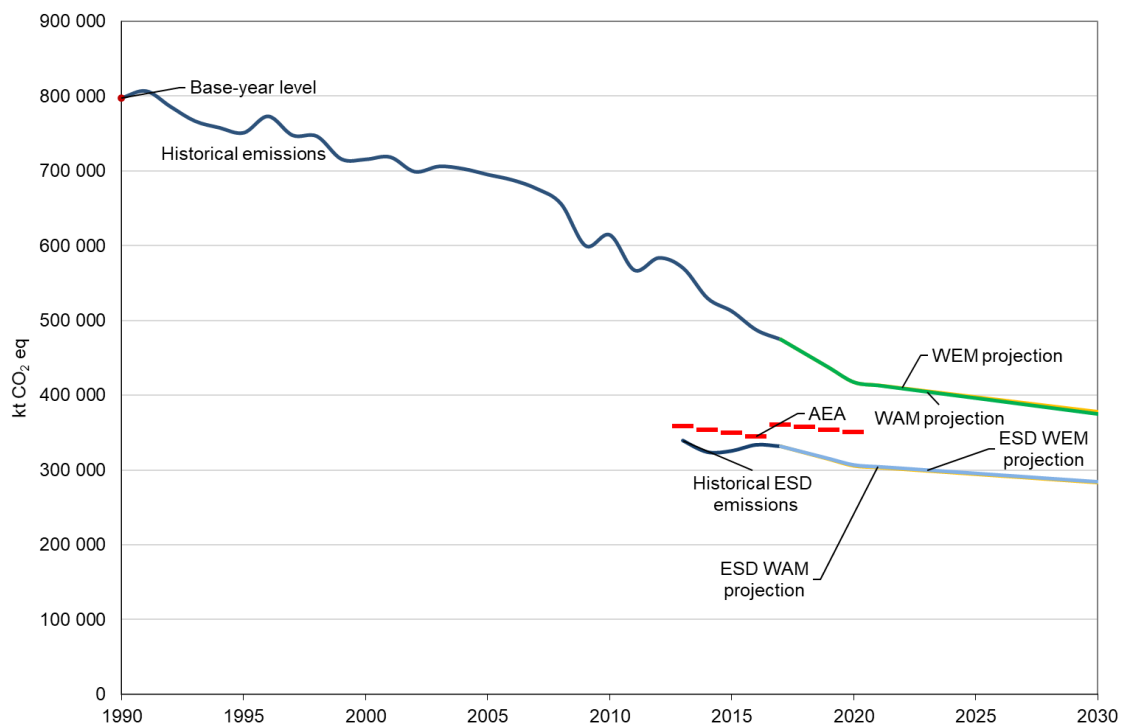
	<i>Total GHG emissions</i>		<i>Emissions under the ESD</i>	
	<i>GHG emissions (kt CO₂ eq/year)</i>	<i>Change in relation to 1990 level (%)</i>	<i>ESD emissions (kt CO₂ eq/year)</i>	<i>Difference from 2020 AEA (%)</i>
2020 AEA under the ESD ^a	NA	NA	350 926.22	NA
Inventory data 1990	797 970.25	0.0	NA	NA
Inventory data 2017	474 356.07	–40.6	332 050.82	–5.4
WEM projections for 2020	417 483.15	–47.7	306 017.92	–12.8
WAM projections for 2020	417 101.89	–47.7	306 743.97	–12.6
WEM projections for 2030	378 357.74	–52.6	283 657.79	–19.2
WAM projections for 2030	374 642.10	–53.1	284 093.16	–19.0

Sources: The United Kingdom’s BR4 and BR4 CTF table 6 and the EU transaction log (AEAs). ESD emissions and projections data were provided by the United Kingdom during the review.

Note: The projections are for GHG emissions excluding LULUCF and excluding indirect CO₂.

^a The quantified economy-wide emission reduction target under the Convention is a joint target of the EU and its member States. The target is to reduce emissions by 20 per cent compared with the base-year (1990) level by 2020. The United Kingdom’s target under the ESD is 16 per cent below the 2005 level by 2020.

Figure 1
Greenhouse gas emission projections reported by the United Kingdom



Sources: EU transaction log (AEAs) and the United Kingdom’s BR4 and BR4 CTF tables 1 and 6. ESD emissions and projections data were provided by the United Kingdom during the review.

57. The United Kingdom’s total GHG emissions excluding LULUCF in 2020 and 2030 are projected under the WEM scenario to decrease by 47.7 and 52.6 per cent, respectively, below the 1990 level. Under the WAM scenario, emissions in 2020 and 2030 are projected to be lower than those in 1990 by 47.7 and 53.1 per cent, respectively.

58. The United Kingdom’s target under the ESD is to reduce ESD emissions by 16 per cent below the 2005 level by 2020 (see para. 15 above). The United Kingdom’s AEAs, which correspond to its national emission target for ESD sectors, change from 358,741.70 kt CO₂ eq in 2013 to 350,926.22 kt CO₂ eq for 2020. The projected level of emissions under the WEM and WAM scenarios is 12.8 and 12.6 per cent, respectively, below the AEAs for 2020. The ERT noted that the Party’s cumulative surplus of AEAs for 2013–2018 is 139,747.46 kt CO₂ eq, which suggests that the United Kingdom expects to meet its target under the WEM scenario.

59. In addition to its target under the ESD, the United Kingdom committed itself to achieving a domestic target of a 34 per cent reduction in emissions below the 1990 level by 2020. The projections indicate that the United Kingdom expects to meet its domestic target for 2020.

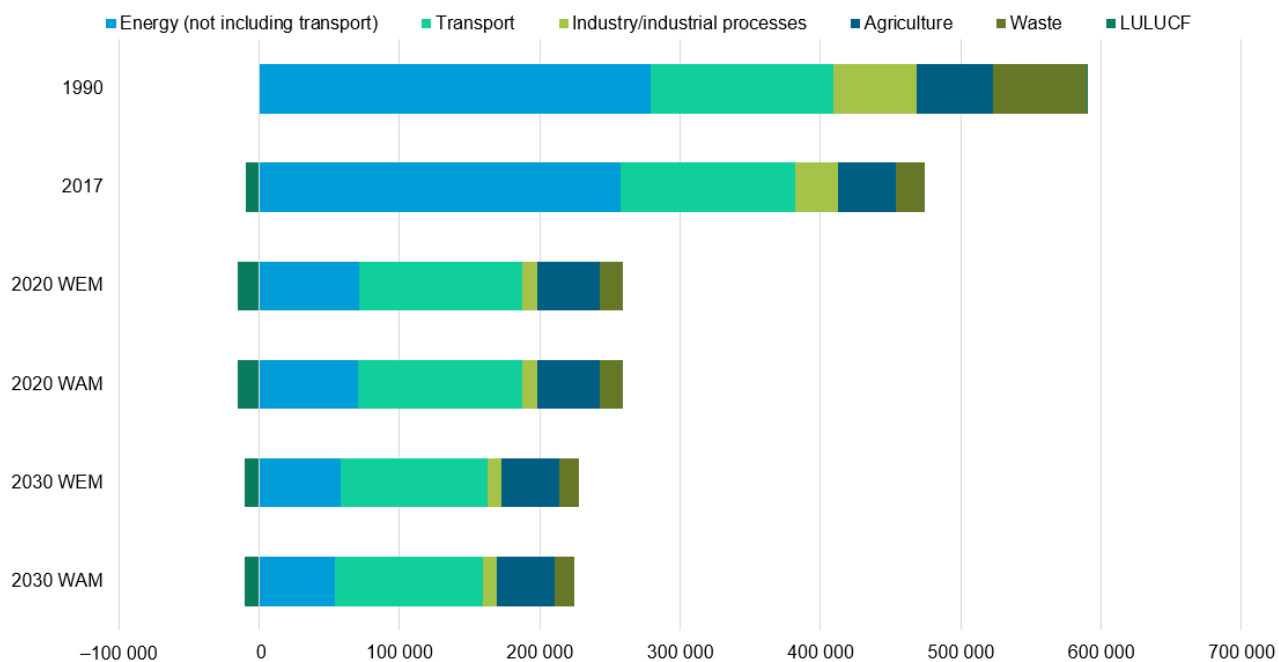
60. The domestic target is presented as carbon budgets set under the 2008 Climate Change Act. According to the 2018 edition of the *Updated energy and emissions projections* (published in April 2019 and updated in May 2019) referenced in the BR4, the United Kingdom met the first and second carbon budgets for 2008–2012 and 2013–2017 with a remaining distance to the target or “headroom” of 36 and 384 Mt CO₂ eq, respectively. The United Kingdom is projected to meet the cap set under the third carbon budget for 2018–2022 with a headroom of 88 Mt CO₂ eq. Although the Party’s cumulative emissions are projected to exceed the caps set under the fourth (2023–2027) and fifth (2028–2032) carbon budgets by 139 and 246 Mt CO₂ eq respectively, the Party’s cumulative emissions for 2008–

2032 are projected to be less than the total emissions budget for all five carbon budgets by 198 Mt CO₂ eq.

61. The United Kingdom presented the WEM and WAM scenarios by sector for 2020 and 2030, as summarized in figure 2 and table 9.

Figure 2
Greenhouse gas emission projections for the United Kingdom presented by sector

(kt CO₂ eq)



Source: The United Kingdom's BR4 CTF table 6.

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

Sector	GHG emissions and removals (kt CO ₂ eq)					Change (%)			
	1990	2020		2030		1990–2020		1990–2030	
		WEM	WAM	WEM	WAM	WEM	WAM	WEM	WAM
Energy (not including transport)	279 114.74	70 865.16	70 527.94	57 650.34	54 139.59	-74.6	-74.7	-79.3	-80.6
Transport	129 611.58	116 538.18	116 538.08	105 425.40	105 429.67	-10.1	-10.1	-18.7	-18.7
Industry/industrial processes	59 937.83	10 654.90	10 652.34	9 427.07	9 423.20	-82.2	-82.2	-84.3	-84.3
Agriculture	54 406.32	44 545.13	44 544.73	41 604.01	41 604.80	-18.1	-18.1	-23.5	-23.5
LULUCF	255.46	-15 633.72	-15 633.72	-10 575.16	-10 575.16	-6 219.8	-6 219.8	239.7	239.7
Waste	66 890.92	16 686.57	16 686.57	13 835.47	13 835.47	-75.1	-75.1	-79.3	-79.3
Other	208 008.86	158 193.22	158 152.23	150 415.45	150 209.37	-23.9	-24.0	-27.7	-27.8
Total GHG emissions excluding LULUCF	797 970.25	417 483.15	417 101.89	378 357.74	374 642.10	-47.7	-47.7	-52.6	-53.1

Source: The United Kingdom's BR4 CTF table 6.

62. According to the projections reported for 2020 under the WEM scenario, the most significant absolute emission reductions are expected to occur in the energy and waste sectors, amounting to projected reductions of 74.6 and 75.1 per cent between 1990 and 2020, respectively. The pattern of projected emissions reported for 2030 under the same scenario remains broadly the same.

63. If additional measures are considered (i.e. under the WAM scenario), the patterns of projected emission reductions by 2020 and 2030 presented by sector remain the same.

64. The United Kingdom presented the WEM and WAM scenarios by gas for 2020 and 2030, as summarized in table 10.

Table 10

Summary of greenhouse gas emission projections for the United Kingdom presented by gas

Gas	GHG emissions and removals (kt CO ₂ eq)					Change (%)			
	1990	2020		2030		1990–2020		1990–2030	
		WEM	WAM	WEM	WAM	WEM	WAM	WEM	WAM
CO ₂ ^a	601 480.56	338 887.81	338 508.87	312 596.01	308 888.71	–43.7	–43.7	–48.0	–48.6
CH ₄	133 013.39	47 387.35	47 386.02	42 224.60	42 220.28	–64.4	–64.4	–68.3	–68.3
N ₂ O	46 128.03	19 243.95	19 242.96	18 349.46	18 345.44	–58.3	–58.3	–60.2	–60.2
HFCs	14 391.43	11 159.17	11 159.17	4 327.96	4 327.96	–22.5	–22.5	–69.9	–69.9
PFCs	1 651.53	353.95	353.95	353.95	353.95	–78.6	–78.6	–78.6	–78.6
SF ₆	1 305.31	450.92	450.92	505.76	505.76	–65.5	–65.5	–61.3	–61.3
NF ₃	–	–	–	–	–	–	–	–	–
Total GHG emissions without LULUCF	797 970.25	417 483.15	417 101.89	378 357.74	374 642.10	–47.7	–47.7	–52.6	–53.1

Source: The United Kingdom’s BR4 CTF table 6.

^a The United Kingdom did not include indirect CO₂ emissions in its projections.

65. For 2020, the most significant absolute reductions under the WEM scenario are projected for CO₂ and CH₄ emissions: 43.7 and 64.4 per cent between 1990 and 2020, respectively.

66. For 2030, the same pattern is observed, with the largest absolute emission reductions projected for CO₂ and CH₄. However, in terms of the percentage change, the decrease in emissions of HFCs is much more significant between 2020 and 2030, with a decrease of 69.9 per cent between 1990 and 2030 compared with 22.5 per cent between 1990 and 2020.

67. If additional measures are considered (i.e. under the WAM scenario), the patterns of emission reductions by 2020 and 2030 presented by gas remain the same.

(d) Assessment of adherence to the reporting guidelines

68. The ERT assessed the information reported in the BR4 of the United Kingdom and identified issues relating to completeness, transparency and thus adherence to the UNFCCC reporting guidelines on BRs. The findings are described in table 11.

Table 11

Findings on greenhouse gas emission projections reported in the fourth biennial report of the United Kingdom

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation or encouragement
1	Reporting requirement specified in paragraph 35 Issue type: completeness Assessment: encouragement	The United Kingdom did not report emission projections of indirect GHGs, such as carbon monoxide, NO _x and NMVOCs, as well as sulfur oxides, in line with the encouragement from the previous review report. During the review, the United Kingdom explained that although it collects historic data on emissions from indirect GHGs for the GHG inventory, it is currently not able to report projections of indirect GHGs. However, the ERT noted that the United Kingdom reports emission projections of SO ₂ , NO _x and NMVOCs under the United Nations Economic Commission for Europe Convention on Long-range Transboundary Air Pollution. The United Kingdom confirmed that it would make efforts to include projections for NO _x , SO ₂ and NMVOCs in its BR5. The ERT reiterates the encouragement from the previous review report for the United Kingdom to improve completeness by reporting projections of indirect

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation or encouragement
2	Reporting requirement specified in paragraph 47 Issue type: transparency Assessment: encouragement	<p>GHGs, such as carbon monoxide, NO_x and NMVOCs, as well as sulfur oxides, in the BR.</p> <p>The United Kingdom did not report numerical data for all historical years for all underlying assumptions reported in CTF table 5 and reported “NO” for the carbon price and GDP growth rate for 1990, 1995 and 2000, and “NE” for the natural gas price for 1990 and 1995.</p> <p>During the review, the United Kingdom clarified that information on the GDP growth rate relating to the missing historical data would be included in the BR5. Regarding the natural gas price, the Party explained that the gas market was not liberalized until the mid-1990s and hence the natural gas prices are not comparable across the time series. The Party also explained that carbon price values are not relevant for the period before the start of the EU ETS in 2005.</p> <p>The ERT encourages the United Kingdom to enhance the transparency of its reporting by providing numerical data for the GDP growth in CTF table 5 and by providing the reasons for not reporting the carbon price and natural gas price for all historical years in CTF table 5 in the BR and/or CTF table 5 (e.g. in a footnote to CTF table 5).</p>

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

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

1. Technical assessment of the reported information

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

69. In its BR4, the United Kingdom reported information on its provision of financial, technological and capacity-building support to non-Annex I Parties.

70. The United Kingdom has provided support that it considers to be “new and additional”. The United Kingdom’s international climate finance is the delivery vehicle for all the country’s climate finance programmes and falls under the United Kingdom’s broader ODA framework. Although the United Kingdom continues to provide support to developing countries through ODA, the amount allocated for international climate finance is earmarked separately or ring-fenced from non-climate ODA. The United Kingdom therefore defines “new and additional” as the sum of the international climate finance provided. The BR4 indicates that, for 2016–2021, the United Kingdom committed GBP 5.8 billion as “new and additional” climate finance and further increased it to GBP 11.6 billion for 2021–2026.

71. The United Kingdom reported the support that it has provided to non-Annex I Parties, distinguishing between support for mitigation and adaptation activities and recognizing the capacity-building elements of such support. The Party reported that it distinguishes between mitigation and adaptation using an internal analysis consistently with the OECD DAC definitions provided in the *OECD DAC Rio Markers for Climate: Handbook*. The Party identifies the capacity-building elements of its activities through its extensive network of officials in developing countries and deploys programmes adapted to the needs identified by each developing country Party in accordance with the local circumstances.

72. The United Kingdom’s national approach to tracking the provision of support, including information on indicators, delivery mechanisms used and allocation channels tracked, is based on tracking all climate-related funds channelled under the international climate finance programme. The United Kingdom uses a bottom-up approach to estimate the climate-specific financial support for each programme and project funded under international climate finance. The programmes funded through international climate finance contain climate objectives and planned delivery results and specify the activities relevant to climate change mitigation and/or adaptation, consistently with the guidance provided in the *OECD*

DAC Rio Markers for Climate: Handbook. The United Kingdom has a monitoring and evaluation framework in place that assesses the performance of international climate finance against six key performance indicators published annually on the website of the United Kingdom Government.

73. The United Kingdom's methodology and underlying assumptions used for collecting and reporting information on financial support have been partially reported in CTF table 7. During the review, the Party provided additional information explaining that its international climate finance includes all finance provided through bilateral programmes that consider action to tackle climate change as their main objective; a proportion of the finance provided by bilateral programmes, as assessed by the programme team, whose objectives include, but are not limited to, climate change; all climate-specific core contributions to multilateral institutions (e.g. Green Climate Fund); a proportion of finance representing the climate-relevant contributions to the Global Environment Facility (e.g. 60 per cent for the seventh replenishment of the Global Environment Facility Trust Fund); and a proportion of finance representing the climate-relevant contributions to other core multilateral institutions (e.g. the Consultative Group on International Agricultural Research and the Food and Agriculture Organization of the United Nations) excluding multilateral development banks. The methodology used for preparing the information on international climate finance is based on OECD methodologies for reporting climate finance, including the use of the Rio markers, in line with the requirements of the OECD DAC. There have been no changes in the Party's methodological approach since the BR3.

(b) Financial resources

74. The United Kingdom reported information on its provision of financial support to non-Annex I Parties as required under the Convention, including on financial support provided, committed and pledged, allocation channels and annual contributions.

75. The United Kingdom seeks to ensure that the resources it provides to non-Annex I Parties effectively address their adaptation and mitigation needs. The United Kingdom considers that an integrated approach, combining elements of financial, technological and capacity-building support, is necessary in order to respond to the needs of developing countries, and, as such, all types of programmes are considered for funding under the international climate finance umbrella. The BR4 indicates that between 2011 and 2019 the United Kingdom's international climate finance programmes helped 57 million people to cope with the effects of climate change and reduced or avoided 16 Mt CO₂ eq GHG emissions, with a balance between mitigation and adaptation projects.

76. It described how those resources assist non-Annex I Parties in mitigating GHG emissions and adapting to the adverse effects of climate change and any economic and social consequences of response measures, and contribute to technology development and transfer and capacity-building related to mitigation and adaptation. The multilateral and bilateral funds and technical assistance for GHG mitigation is aimed at supporting the establishment of domestic carbon pricing instruments (e.g. carbon taxes, crediting and offset mechanisms, promoting participation in international carbon markets) and facilitating knowledge exchange across borders. In addition, public financial support and technical assistance are provided for developing countries to mobilize private sector investments for sustainable projects by shaping regulatory frameworks to attract private investors and by supporting the development of local capital markets. The United Kingdom's support for increasing resilience against the effects of climate change includes measures to develop a market for private sector disaster risk insurance and provide technical assistance to build profitable businesses to increase resilience to climate change in rural areas.

77. With regard to the most recent financial contributions aimed at enhancing the implementation of the Convention by developing countries, the United Kingdom allocated its climate finance on the basis of programmes with priority areas such as developing carbon markets and directly targeting the mobilization of private finance for mitigation; and diversifying livelihoods, strengthening infrastructure and increasing resilience to climate extremes for adaptation. The United Kingdom's international climate finance is part of the country's broader ODA framework and is delivered through three government departments, namely the Department for International Development, BEIS and the Department for

Environment, Food and Rural Affairs. The Department for International Development focuses on areas such as supporting climate-resilient food and water supply, infrastructure and delivery of essential services. The primary focus of BEIS is on low-carbon development, particularly on accelerating decarbonization, enabling markets to help finance the climate transition and halting deforestation. The Department for Environment, Food and Rural Affairs focuses on sustainable natural resource management, food security, protection of biodiversity and forestry.

78. Within the framework of the Party's multilateral climate finance, the focus of international climate finance varies according to the channel through which the funding is provided. For example, the contribution to the Climate Investment Funds focuses on clean technology, energy access, climate resilience and sustainable forests. In October 2018, the United Kingdom announced the establishment of the GBP 106.1 million Market Accelerator for Green Construction, a new collaborative programme between the United Kingdom and the International Finance Corporation, which will build demonstration portfolios of green construction at scale with the aim of reducing emissions, mobilizing new finance and inspiring markets to shift towards new energy-efficient buildings. An initial amount of GBP 68 million was committed for 2017–2018. In July 2019, the United Kingdom published its Green Finance Strategy, which sets out green finance objectives and ambitions and aligns all finance flows with clean, resilient growth, including ODA commitments. Table 12 summarizes the information reported by the United Kingdom on its provision of financial support.

Table 12

Summary of information on provision of financial support by the United Kingdom in 2017–2018

(Millions of United States dollars)

<i>Allocation channel of public financial support</i>	<i>Disbursement in 2017–2018</i>
ODA	37 565.61
Climate-specific contributions through multilateral channels, including:	
Global Environment Facility	57.47
Green Climate Fund	418.66
Other multinational climate change funds	8.67
United Nations bodies	3.64
Climate-specific contributions through bilateral, regional and other channels	2 231.24

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

79. The United Kingdom's climate-specific public financial support⁵ totalled USD 2,719.68 million in 2017–2018,⁶ representing an increase of 82.8 per cent since the BR1 (2011–2012).⁷ It has decreased its contributions by 10.1 per cent since the BR3 (2015–2016), as reported in its local currency. With regard to future financial pledges aimed at enhancing the implementation of the Convention by developing countries, the United Kingdom has committed to providing GBP 11.6 billion for 2021–2026 as climate finance.

80. During the reporting period, the United Kingdom placed a particular focus on Africa, Latin America and South Asia. 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 table 13. 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

⁵ For the remainder of this chapter, the term “financial support” means climate-specific financial support, unless otherwise noted.

⁶ During the review, the Party clarified that the footnotes to CTF tables 7, 7(a) and 7(b) for 2017–2018 should read “Figures are shown in GBP/USD millions and rounded to the nearest GBP/USD 10,000”.

⁷ Comparisons with data from previous years have been calculated directly without adjusting for inflation.

contribution cycles of some multilateral funds, timing of approval of individual bilateral projects or changes in exchange rates.

Table 13

Summary of information on channels of financial support used in 2017–2018 by the United Kingdom

(Millions of United States dollars)

Allocation channel of public financial support	Amount disbursed in 2017–2018	Comparison with amount in 2015–2016		Share of total (2017–2018) (%)
		Difference	Change (%)	
Detailed information by type of channel				
Multilateral channels				
Mitigation	0.00	–682.90	–100.0	0.0
Adaptation	0.00	–424.50	–100.0	0.0
Cross-cutting	488.44	469.04	2 417.7	100.0
Other	0.00	0.00	–	0.0
Total multilateral	488.44	–638.36	–56.7	100.0
Bilateral channels				
Mitigation	1 132.75	118.35	11.7	50.8
Adaptation	1 093.60	–65.30	–5.6	49.0
Cross-cutting	4.89	–28.01	–85.1	0.2
Other	0.00	0.00	–	0.0
Total bilateral	2 231.24	25.04	1.1	100.0
Total multilateral and bilateral	2 719.68	–613.32	–18.4	100.0

Source: The United Kingdom's BR4 CTF tables 7, 7(a) and 7(b).

81. The United Kingdom contributed USD 488.44 million in 2017–2018 through multilateral channels. The contributions were made to specialized multilateral climate change funds, such as the Green Climate Fund and the Global Environment Facility. The United Kingdom's contributions to the Global Environment Facility increased in 2017–2018 (USD 57.47 million) compared with 2015–2016 (USD 28.34 million). The United Kingdom's climate finance contributions to multilateral channels decreased by 56.7 per cent in 2017–2018, while the contributions through bilateral channels remained broadly the same as in 2015–2016. However, during the review, the Party informed the ERT that the contributions made to some multilateral funds (such as multilateral development banks) are counted as core funds instead of climate finance in order to avoid double counting and owing to a lack of an agreed method for imputing the share in total finance, even though some of those contributions are used for climate change projects.

82. The Party reported detailed information on the total financial support provided through bilateral and regional channels in 2017–2018 (USD 2,231.24 million). The figures indicate that significantly more support is provided through bilateral channels than multilateral channels.

83. The BR4 provides information on the types of support provided. In terms of the focus of public financial support, as reported in CTF table 7, in 2017–2018 the average shares of the total public financial support allocated to mitigation, adaptation and cross-cutting projects were 41.7, 40.2 and 18.1 per cent, respectively. During the review, the Party explained that it reported the climate finance provided through multilateral channels for adaptation and mitigation activities as cross-cutting owing to technical limitations related to the CTF application. The ERT noted that the information on the type of financial support reported in the BR4 underlines the Party's focus on maintaining a balance between the support provided for mitigation and adaptation projects.

84. The ERT noted that in 2017–2018 the majority of financial contributions through multilateral channels were allocated to cross-cutting sectors, as reported in CTF table 7(a). In 2017–2018, the financial contributions through bilateral and regional channels were allocated to sectors such as renewable energy, energy efficiency, agriculture, disaster risk

finance, infrastructure and forestry. For example, through the Building Resilience and Adaptation to Climate Extremes and Disasters programme, up to 10 million people have been targeted to increase resilience against extreme climate events in the Sahel, sub-Saharan Africa and South Asia. The programme has received the largest amount of funding among the bilaterally funded projects and programmes reported by the Party for 2017.

85. CTF tables 7(a) and 7(b) include information on the types of financial instrument used for providing assistance to developing countries. The ERT noted that the grants provided in 2017–2018 accounted for most (91 per cent) of the total public financial support.

86. The United Kingdom reported that private finance is mainly mobilized for channelling investment in sustainable infrastructure. The BR4 highlights private finance mobilization as one of the United Kingdom's two priority areas for climate finance and mentions that in 2011–2018 an estimated GBP 1.4 billion in private finance was mobilized in developing countries for climate change purposes. The Party also reported on how it uses public funds to promote private sector financial support to increase mitigation and adaptation efforts in developing countries, such as by providing technical assistance to governments to help them shape their regulatory frameworks to attract private investors, and to support the development of local capital markets. For example, the United Kingdom Climate Investments programme aims to scale up private finance flows in markets in India and sub-Saharan Africa through equity investments in renewable energy and energy efficiency, with GBP 44 million committed in 2017–2018.

87. An example of the United Kingdom's support is Africa Division funding for the African Agriculture Development Company. In 2017, the United Kingdom granted USD 22.81 million for the project, which targets climate change adaptation in the agriculture sector. The project focuses on early-stage small and medium-sized enterprise agribusiness in sub-Saharan Africa (currently operating in Ghana, Malawi, Mozambique, Rwanda, Sierra Leone, Uganda, United Republic of Tanzania and Zambia) and provides capital and technical assistance to build profitable businesses that contribute to food security, drive economic growth, create jobs and income in rural areas and contribute to farmers' resilience to climate change.

88. The Party also reported that through the Rural Electrification in Sierra Leone project, USD 15.41 million has been granted to Sierra Leone to increase access to clean energy through the creation of environmentally and economically sustainable electric mini-grid systems for small remote rural communities by 2020. This project will add more than 10 MW to the country's power generation capacity of an estimated average peak demand requirement of 300–500 MW and is expected to directly benefit approximately 360,000 people in rural areas and indirectly help up to 1.8 million people to access low-carbon electricity. The project is also expected to result in a significant reduction in Sierra Leone's future GHG emissions through supported private investment in the installation and operation of mini-grids powered by renewable sources.

(c) Technology development and transfer

89. The United Kingdom implements steps, 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 the SUNRISE network,⁸ which links leading universities and industrial partners from the United Kingdom and India through a transdisciplinary international research network to help develop and implement technology to build five solar-powered building demonstrators in rural India. Another example of such support is the Ecological Productivity Management Information System⁹ project, which aims to help Colombian rice and oil palm farmers improve their productivity and generate stable incomes, besides increasing their competitiveness and helping them respond to climate change. The project uses satellite Earth observation data, as well as crop and environmental data, to research the

⁸ See <http://www.sunrisenetwork.org/>.

⁹ See <https://www.ecopromis.com/>.

impacts of crop and ecosystem management on biodiversity, productivity and GHG emissions.

90. The United Kingdom focuses the provision of its technology transfer support on projects implemented globally and in Colombia, Fiji, Kenya, the Solomon Islands, Uganda and Vanuatu, as well as some regional projects in Africa and South and East Asia. The projects focus on mitigation and adaptation mainly in the energy sector and address carbon capture, use and storage, energy access and renewable energy, as well as supporting research and scientific institutions through activities undertaken by both the public and private sector.

91. Since its BR3, the United Kingdom has implemented additional measures and activities such as providing increased funding of GBP 10 million towards carbon capture, use and storage technologies to support developing countries in gaining the technical and institutional knowledge necessary to enable the deployment of such technologies. The United Kingdom also allocated GBP 19.2 million to the Energy Sector Management Assistance Programme covering technical and advisory services to help developing countries in transitioning to clean energy and an additional GBP 3.5 million to the 2050 Calculator, which helps developing countries to create energy models for energy planning and for developing pathways for the transition to clean energy. The United Kingdom also described success and failure stories in relation to technology transfer, and in particular on measures taken to promote, facilitate and finance the transfer and deployment of climate-friendly technologies. Successful projects include the provision of co-financing for a pilot CO₂ storage project in South Africa, the provision of funding for the establishment of the first carbon capture, use and storage centre of excellence in Mexico and the provision of financial support and technical assistance to China to support the development of a full-chain carbon capture, use and storage coal-to-chemical plant.

(d) Capacity-building

92. The United Kingdom has provided 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. The Party considers three aspects in its provision of capacity-building support: (1) it should be country-led so that it responds to local demand, is tailored to the local context, reflects local capacity and social norms and builds on existing national processes and institutions; (2) it should be flexible to enable it to adapt to evolving circumstances and priorities in the country; and (3) it should be sustainable to ensure that capacity is built and sustained in the longer term. The United Kingdom ensures close relationships with governments and key organizations in developing countries through its extensive network of officials based in those countries, and develops bilateral programmes based on those countries' needs.

93. The United Kingdom has supported climate-related capacity development activities relating to adaptation, mitigation, climate financing and technology transfer. Since the BR3, the focus of support has remained stable. The United Kingdom's support has responded to the existing and emerging capacity-building needs of non-Annex I Parties by following the principles of national ownership, stakeholder participation, country-driven demand and cooperation between donors and across programmes.

94. Successful capacity-building projects include the Climate Impacts Research Capacity and Leadership Enhancement programme, which seeks to develop the capacity of African scientists to perform research on the impact of climate change by providing one-year visiting fellowships for climate change researchers. During their fellowship, the scientists receive professional and technical support to access research published in peer-review journals. This programme also offers support to national institutions to strengthen research training programmes, mentoring and quality assurance systems.

95. The United Kingdom's Newton Fund seeks to develop scientific and innovation-related collaboration to promote development. It has already supported several initiatives in enhancing collaboration and capacity-building for technology transfer. In 2018, one of the projects awarded funding under the Newton Fund was a collaborative venture between the University of Antioquia in Colombia and Surrey University in the United Kingdom, which

sought to develop a method to produce electricity using microbial fuel cells with wastewater from coffee processing, thus preventing wastewater from contaminating watercourses. Another successful programme involved collaboration between scientists in the United Kingdom and Chile to develop a framework to improve the energy infrastructure by making it resilient to extreme weather and natural disasters.

2. Assessment of adherence to the reporting guidelines

96. The ERT assessed the information reported in the BR4 of the United Kingdom and identified issues relating to transparency and thus adherence to the UNFCCC reporting guidelines on BRs. The findings are described in table 14.

Table 14

Findings on provision of support to developing country Parties from the review of the fourth biennial report of the United Kingdom

No.	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
1	<p>Reporting requirement specified in paragraph 13</p> <p>Issue type: transparency</p> <p>Assessment: recommendation</p>	<p>The Party reported in the BR4 that climate mitigation and adaptation finance provided to developing countries is channelled through the United Kingdom's international climate finance programme, which is framed under ODA, but ring-fenced from non-climate ODA. However, the Party did not transparently report how it determined its climate finance support as "new and additional", such as by indicating the baseline year from which the finance provided as international climate finance is considered as "new and additional" compared with the Party's historical levels of ODA commitments. In the BR4 (section 6.3), the Party mentioned 2009 as the year in which, in the context of meaningful mitigation actions and transparency on implementation, developed countries set a goal to mobilize jointly USD 100 billion in public and private finance per year by 2020 to address the needs of developing countries, but did not clarify whether this year was used as the baseline year for identifying international climate finance as "new and additional".</p> <p>During the review, the United Kingdom explained that its international climate finance commitments, which are ring-fenced from non-climate ODA funding, are dedicated to climate finance, and that they are considered as "new and additional" to any previous commitments. This includes the GBP 5.8 billion commitment for 2016–2021, which was followed by an increase in funding to GBP 11.6 billion for 2021–2026. During the review, the Party also explained that, while there is no baseline year against which climate finance is considered as "new and additional", total ODA rose from GBP 7.3 billion in 2009 (when the USD 100 billion goal was set) to GBP 15.2 billion in 2019, the latest year for which data are published, indicating that non-climate ODA has continued to rise alongside the United Kingdom's efforts to scale up climate finance towards the USD 100 billion goal. However, during the review, the Party clarified that it considers 2009 as the baseline year for determining "new and additional" climate finance.</p> <p>The ERT reiterates the recommendation from the previous review report that the United Kingdom enhance the transparency of its reporting by clarifying in the BR how it determines that financial resources are "new and additional", for example by specifying the distinction between the financial support provided under the international climate finance and ODA frameworks and by including a clear explanation of the definition and baseline year used by the Party to determine climate finance as being "new and additional".</p>
2	<p>Reporting requirement specified in paragraph 14</p> <p>Issue type: transparency</p> <p>Assessment: recommendation</p>	<p>The Party did not report transparent information in its BR4 on the indicators used for tracking the provision of financial, technological and capacity-building support to non-Annex I Parties. Although the United Kingdom reported in its BR4 that it uses key performance indicators for evaluating the performance of international climate finance, it is not clear from the BR4 what these indicators are.</p> <p>During the review, the United Kingdom provided additional information on the six key performance indicators, such as the GHG emission reduction levels and the level of installed capacity of clean energy. The key performance indicators are used for the monitoring and evaluation of the achievements resulting from the portfolio of international climate finance. The key performance indicators are</p>

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation or encouragement
		provided and updated annually on the website of the Government of the United Kingdom.
		The ERT reiterates the recommendation from the previous review report that the United Kingdom enhance the transparency of the reporting on its approach used for tracking the provision of technological and capacity-building support, for example by including in the BR information on the key performance indicators (e.g. type(s) and/or related goals) and indicative examples, together with the weblink to the relevant website of the Government of the United Kingdom and other sources of information, as necessary.
3	Reporting requirement specified in paragraph 15 Issue type: transparency Assessment: recommendation	<p>In its BR4, the Party reported on the underlying assumptions and methodologies used to produce information on finance. However, the Party did not transparently describe how it assesses the financial support provided as being climate-specific. In addition, it is not clear why climate-related support for multilateral development banks is not reflected in CTF tables 7 and 7(a), as well as in the textual part of the BR. Further, the Party did not transparently describe the underlying assumptions and methodologies used to report the information on climate finance provided through other channels in the BR4 or in the CTF tables.</p> <p>During the review, the United Kingdom explained that the amount of climate finance within each project is identified separately using a bottom-up approach in accordance with internal guidance on international climate finance, which sets out the criteria for assessing climate objectives and results using the guidance provided in the <i>OECD DAC Rio Markers for Climate: Handbook</i>. The Party also explained that in order to avoid double counting, the core contributions provided to multilateral development banks are not included as climate finance in CTF table 7.</p> <p>The ERT recommends that the United Kingdom enhance the transparency of its reporting by clearly describing the underlying assumptions and methodologies used for preparing CTF tables 7 and 7(a) in detail both in the CTF tables and in the textual part of the BR. The ERT also reiterates the recommendation from the previous review report that the Party enhance the transparency of its reporting by clarifying the methodology or approach used to determine the financial support provided as being climate-specific, including the underlying methodologies or guidance documents used.</p>
4	Reporting requirement specified in paragraph 18 Issue type: transparency Assessment: recommendation	<p>The ERT noted a lack of consistency between the textual part of the BR4 and CTF tables 7 and 7(a) regarding the amounts of financial support provided for adaptation. For example, the BR4 mentions funding of GBP 1,012 million for adaptation for 2017–2018, while CTF table 7 indicates a combined total of GBP 991 million for adaptation and cross-cutting activities for the same period.</p> <p>During the review, the United Kingdom explained that the above-mentioned inconsistency stems from limitations in the CTF application, whereby it was not possible to distinguish between the financial support provided for mitigation and adaptation in CTF table 7(a), which led to the Party’s decision to add this information as a footnote in the next BR.</p> <p>The ERT recommends that the United Kingdom enhance the transparency of its reporting on adaptation finance reported in CTF tables 7 and 7(a) by clarifying the lack of consistency between the amounts of financial support provided for adaptation reported in the textual part of the BR and CTF tables 7 and 7(a), for example by providing a footnote explaining the limitations in the CTF application regarding the preparation of CTF tables 7 and 7(a).</p>

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

III. Conclusions and recommendations

97. The ERT conducted a technical review of the information reported in the BR4 and BR4 CTF tables of the United Kingdom in accordance with the UNFCCC reporting guidelines on BRs. The ERT concludes that the reported information mostly adheres to the

UNFCCC reporting guidelines on BRs and provides an overview of emissions and removals related to the Party's quantified economy-wide emission reduction target; assumptions, conditions and methodologies related to the attainment of the target; the progress of the United Kingdom towards achieving its target and the Party's provision of support to developing country Parties.

98. The United Kingdom's total GHG emissions excluding LULUCF covered by its quantified economy-wide emission reduction target were estimated to be 41.6 per cent below its 1990 level, whereas total GHG emissions including LULUCF were 42.9 per cent below its 1990 level, in 2018. Emissions peaked in 1991 and decreased thereafter. The changes in total emissions were driven mainly by actions such as the shift away from coal-fired power generation towards increased use of natural gas and renewable energy sources, tighter regulations on landfills, including increased use of landfill CH₄ in gas flares and engines, the introduction of abatement technology in adipic acid and nitric acid production and one-off factors such as the 2008 global economic recession and the cold weather in the United Kingdom in 2010 and 2012.

99. Under the Convention the United Kingdom committed to contributing to the achievement of the joint EU quantified economy-wide target of a 20 per cent reduction in emissions below the 1990 level by 2020. The target covers all sectors and CO₂, CH₄, N₂O, HFCs, PFCs and SF₆, expressed using GWP values from the AR4. Emissions and removals from the LULUCF sector are not included. Under the ESD the United Kingdom has a target of reducing its emissions by 16 per cent below the 2005 level by 2020.

100. In its NDC under the Paris Agreement, the United Kingdom committed to reducing economy-wide GHG emissions by at least 68 per cent below the 1990 level by 2030. In June 2019, the 2008 Climate Change Act was amended to commit the United Kingdom to achieving net zero GHG emissions by 2050.

101. In 2018, the United Kingdom's ESD emissions were 7.7 per cent (27,367.64 kt CO₂ eq) below the AEA. The United Kingdom does not intend to use units from market-based mechanisms under the Kyoto Protocol and other market-based mechanisms under the Convention to meet its commitment under the ESD. The United Kingdom has a cumulative surplus of 139,747.46 kt CO₂ eq with respect to its AEAs. The ERT noted that the United Kingdom is making progress towards its ESD target by implementing mitigation actions that are delivering significant emission reductions.

102. The GHG emission projections provided by the United Kingdom in its BR4 correspond to the WEM and WAM scenarios. Under these scenarios, emissions are projected to be 47.7 per cent below the 1990 level by 2020. According to the projections under the WEM scenario, ESD emissions are estimated to reach 306,017.92 kt CO₂ eq by 2020. Under the WAM scenario, the United Kingdom's ESD emissions in 2020 are projected to be 306,743.97 kt CO₂ eq. The projected level of emissions under the WEM and WAM scenarios is 12.8 and 12.6 per cent, respectively, below the AEAs for 2020. Taking into account its cumulative surplus of AEAs referred to in paragraph 58 above, the United Kingdom expects to meet its target under the WEM scenario.

103. The United Kingdom's main policy framework relating to energy and climate change is the 2008 Climate Change Act, which defines the mechanism for monitoring progress towards domestic targets through carbon budgets. The Party described the mitigation actions that it has implemented to help it achieve its 2020 targets, which include actions to address energy supply, energy efficiency and fuel consumption efficiency, for example through its New Energy Supply policies, Building Regulations implementing the EU directive on energy performance of buildings, car fuel efficiency policies implementing EU regulations on biofuel use and energy efficiency in road transport, the EU ecodesign directive, the EU energy labelling framework regulation, the EU F-gas regulation and the United Kingdom's Energy Efficiency Commitment and Carbon Emissions Reduction Target, and the Agricultural Action Plan.

104. The Party highlighted mitigation actions for 2020–2030 that it has recently implemented and plans to implement to help achieve its medium- and long-term emission reduction targets. These PaMs include the continuation of Contracts for Difference in the electricity generation market, including support for the use of nuclear energy, and a set of

support schemes for ultra-low-emission vehicles, including the charging infrastructure for electric vehicles.

105. The United Kingdom continues to provide climate financing to developing countries in line with its climate finance programmes such as international climate finance through which all of the United Kingdom's climate finance is channelled. Further to the United Kingdom's climate-specific finance programme, in 2019 the Green Finance Strategy was adopted, which aims to align all finance flows with clean, resilient growth, including ODA commitments. It has reduced the level of its financial support by 18.4 per cent since the BR3; its public financial support in 2017–2018 totalled USD 2,719.68 million. For those years, the United Kingdom provided slightly more support for mitigation than for adaptation. The biggest share of financial support went to projects and programmes in the energy, agriculture, disaster risk finance, infrastructure and forestry sectors. An example of this support is the Building Resilience and Adaptation to Climate Extremes and Disasters programme, targeting up to 10 million people to increase resilience against extreme climate events in the Sahel, sub-Saharan Africa and South Asia.

106. The United Kingdom continues to provide support for technology development and transfer and capacity-building. Priority for technological support was given to projects and programmes in mitigation and adaptation globally and in Colombia, Fiji, Kenya, the Solomon Islands, Uganda and Vanuatu, as well as some regional projects in Africa and South and East Asia. Since the BR3, the focus has remained the same. A key project is the SUNRISE network, which links leading universities and industrial partners from the United Kingdom and India through a transdisciplinary international research network to help develop and implement technology to build five solar-powered building demonstrators in rural India.

107. Priority for capacity-building support was given to projects and programmes in mitigation and adaptation in Africa, Latin America and South Asia. Since the BR3, the focus has remained the same. A good example of the Party's support for capacity-building is the Climate Impacts Research Capacity and Leadership Enhancement programme, which seeks to develop the capacity of African scientists to perform research on the impact of climate change providing one-year visiting fellowships for climate change researchers.

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

(a) To improve the completeness of its reporting by providing the mitigation impacts of all mitigation actions or explaining in the BR and/or CTF table 3 (e.g. using a footnote and/or appropriate notation keys such as "NE") why this is not possible owing to its national circumstances (see issue 2 in table 5);

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

(i) Consistently reporting information on other market-based mechanisms in CTF table 2e(II) and the textual part of the BR or clearly explaining in the BR and/or CTF table 2(e)II why no information was reported (e.g. using a footnote and/or notation keys) (see issue 1 in table 3);

(ii) Providing specific descriptions in the BR for all reported mitigation actions, clearly distinguishing between those with similar names, and by explaining the geographical scope of all mitigation actions (see issue 1 in table 5);

(iii) Reporting correct information on the impacts of its mitigation actions in CTF table 3, and by ensuring that mitigation actions and impacts reported for them are not reported more than once (see issue 3 in table 5);

(iv) Reporting in CTF table 4 the actual amount of units from market-based mechanisms used towards the achievement of its quantified economy-wide emission reduction target under the Convention or by clearly explaining why no information is reported (e.g. using a footnote and/or notation keys) (see issue 1 in table 7);

(v) Clarifying in the BR how it determines financial resources as being "new and additional" and by including a clear explanation of the definition and baseline year

used by the Party to determine climate finance as being “new and additional” (see issue 1 in table 14);

(vi) Elaborating in the BR on the approach used for tracking the provision of technological and capacity-building support, for example by including information on the key performance indicators and indicative examples, together with the weblink to the relevant website of the Government of the United Kingdom and other sources of information, as necessary (see issue 2 in table 14);

(vii) When reporting on its financial contributions, clearly describing the underlying assumptions and methodologies used for preparing CTF tables 7 and 7(a) in detail both in the CTF tables and in the textual part of the BR and by clarifying the methodology or approach used to determine the financial support provided as being climate-specific, including the underlying methodologies or guidance documents used (see issue 3 in table 14);

(viii) When reporting on its financial contributions, clarifying the lack of consistency between the amounts of financial support provided for adaptation reported in the textual part of the BR and CTF tables 7 and 7(a), for example by providing a footnote explaining the limitations in the CTF application regarding the preparation of CTF tables 7 and 7(a) (see issue 4 in table 14).

Annex

Documents and information used during the review

A. Reference documents

2019 GHG inventory submission of the United Kingdom. Available at

<https://unfccc.int/process-and-meetings/transparency-and-reporting/reporting-and-review-under-the-convention/greenhouse-gas-inventories-annex-i-parties/submissions/national-inventory-submissions-2019>.

2020 GHG inventory submission of the United Kingdom. Available at

<https://unfccc.int/ghg-inventories-annex-i-parties/2020>.

BR3 of the United Kingdom. Available at <https://unfccc.int/process-and-meetings/transparency-and-reporting/reporting-and-review-under-the-convention/national-communications-and-biennial-reports-annex-i-parties/biennial-report-submissions/third-biennial-reports-annex-i>.

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

BR4 of the United Kingdom. Available at <https://unfccc.int/BRs>.

BR4 CTF tables of the United Kingdom. Available at <https://unfccc.int/BRs>.

BR4 CTF tables of the United Kingdom. Available at <https://unfccc.int/BRs>.

“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>.

Draft NECP of the United Kingdom. Available at

<https://www.gov.uk/government/publications/uk-national-energy-and-climate-plan-necp>.

European Green Deal. European Commission document COM(2019) 640 final. Available at

https://ec.europa.eu/info/files/communication-european-green-deal_en.

“Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual greenhouse gas inventories”. Annex I to decision 24/CP.19. Available at

<http://unfccc.int/resource/docs/2013/cop19/eng/10a03.pdf>.

“Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications”.

FCCC/CP/1999/7. Available at <http://unfccc.int/resource/docs/cop5/07.pdf>.

“Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention”. Annex to decision 13/CP.20. Available at

<http://unfccc.int/resource/docs/2014/cop20/eng/10a03.pdf>.

IPCC. 2014. *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands*. T Hiraishi, T Krug, K Tanabe, et al. (eds.). Geneva: IPCC. Available at <https://www.ipcc.ch/publication/2013-supplement-to-the-2006-ipcc-guidelines-for-national-greenhouse-gas-inventories-wetlands/>.

Report on the individual review of the annual submission of the United Kingdom submitted in 2019. FCCC/ARR/2019/GBR. Available at

https://unfccc.int/sites/default/files/resource/arr2019_GBR.pdf.

Report on the technical review of the BR3 of the United Kingdom. FCCC/TRR.3/GBR.

Available at https://unfccc.int/sites/default/files/resource/TRR.3_GBR.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 Rose Armitage (BEIS), including additional material. The following documents¹ were provided by the United Kingdom:

BEIS. 2019a. *Updated energy and emissions projections: 2018*. Available at <https://www.gov.uk/government/publications/updated-energy-and-emissions-projections-2018>.

BEIS. 2019b. *Green Finance Strategy*. Available at <https://www.gov.uk/government/publications/green-finance-strategy>.

BEIS. 2020. *Updated energy and emissions projections: 2019*. Available at <https://www.gov.uk/government/publications/updated-energy-and-emissions-projections-2019>.

OECD. *OECD DAC Rio Markers for Climate: Handbook*. Available at https://www.oecd.org/dac/environment-development/Revised%20climate%20marker%20handbook_FINAL.pdf.

¹ References reproduced as received from the Party.