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

According to decision 2/CP.17, developed country Parties are requested to submit their second biennial reports by 1 January 2016, that is, two years after the due date for submission of a full national communication. This report presents the results of the technical review of the second 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".

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I. Introduction and summary

A. Introduction

1. This report covers the centralized technical review of the second biennial report (BR2)[1] 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). In accordance with the same decision, a draft version of this report was communicated to the Government of the United Kingdom, which provided comments that were considered and incorporated with revisions into this final version of the report.

2. The review took place from 14 to 19 March 2016 in Bonn, Germany, and was conducted by the following team of nominated experts from the UNFCCC roster of experts: Mr. Tom Dauwe (Belgium), Mr. Raúl Jorge Garrido Vázquez (Cuba), Ms. Patricia Grobben (Belgium), Mr. Bernard Hyde (Ireland), Mr. Mwangi James Kinyanjui (Kenya), Mr. Giorgi Machavariani (Georgia), Mr. Naoki Matsuo (Japan), Mr. Mark Molnar (Hungary), Mr. Marius Ţăranu (Republic of Moldova) and Mr. Shengmin Yu (China). Ms. Grobben and Mr. Ţăranu were the lead reviewers. The review was coordinated by Mr. Bernd Hackmann and Ms. Sylvie Marchand (UNFCCC secretariat).

B. Summary

3. The expert review team (ERT) conducted a technical review of the information reported in the BR2 of the United Kingdom in accordance with the "UNFCCC biennial reporting guidelines for developed country Parties" (hereinafter referred to as the UNFCCC reporting guidelines on BRs). During the review, the United Kingdom provided the following additional relevant information on: its mitigation actions and their effects; its understanding of "new and additional" in relation to the provision of financial support to Parties not included in Annex I to the Convention (non-Annex I Parties); its national approach for tracking and reporting on the provision of financial, technological and capacity-building support to non-Annex I Parties, including relevant indicators and methodologies; and how its capacity-building support responds to the existing and emerging capacity-building needs identified by non-Annex I Parties.

1. Timeliness

4. The BR2 was submitted on 18 December 2015, before the deadline of 1 January 2016 mandated by decision 2/CP.17. The common tabular format (CTF) tables were also submitted on 18 December 2015.

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

5. Issues and gaps related to the reported information identified by the ERT are presented in table 1 below. The information reported by the United Kingdom in its BR2 is

[1] The biennial report submission comprises the text of the report and the common tabular format (CTF) tables. Both the text and the CTF tables are subject to the technical review.

mostly in adherence with the UNFCCC reporting guidelines on BRs as per decision 2/CP.17.

Table 1

Summary of completeness and transparency issues related to mandatory reported information in the second biennial report of the United Kingdom of Great Britain and Northern Ireland

Chapter of the biennial report	*Completeness*	*Transparency*	*Paragraphs with recommendations*
Greenhouse gas emissions and trends	Complete	Mostly transparent	6
Assumptions, conditions and methodologies related to the attainment of the quantified economy-wide emission reduction target	Complete	Transparent	
Progress in achievement of targets	Mostly complete	Partially transparent	18, 19, 23, 24, 35–37
Provision of support to developing country Parties	Complete	Mostly transparent	62, 70, 84

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

II. Technical review of the reported information

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

6. The United Kingdom has provided a summary of information on greenhouse gas (GHG) emission trends for the period 1990–2013 in its BR2 and CTF tables 1(a)–(d). The BR2 makes reference to the national inventory arrangements, which are explained in more detail in the national inventory report included in the United Kingdom's 2015 annual inventory submission (in chapter 1). The national inventory arrangements were established in accordance with the reporting requirements related to national inventory arrangements contained in the "Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual greenhouse gas inventories" that are required by paragraph 3 of the UNFCCC reporting guidelines on BRs. The ERT noted that there have been no changes to the national inventory arrangements of the United Kingdom since its first biennial report (BR1); however, this is not explicitly stated in the BR2. To improve the transparency of reporting, the ERT recommends that the United Kingdom explicitly state in its next biennial report (BR) whether changes have or have not occurred in national arrangements since the previous national communication or BR.

7. The information reported in the BR2 on emission trends is consistent with that reported in the 2015 annual inventory submission of the United Kingdom. To reflect the most recently available data, the 30 October 2015 version 1 of the Party's 2015 annual inventory submission has been used as the basis for discussion in chapter II.A of this review report.

8. Total GHG emissions[2] excluding emissions and removals from land use, land-use change and forestry (LULUCF) decreased by 28.7 per cent between 1990 and 2013, whereas total GHG emissions including net emissions or removals from LULUCF decreased by 29.7 per cent over the same period. The decrease in the total GHG emissions can be attributed mainly to carbon dioxide (CO_2) emissions, which decreased by 20.3 per cent (excluding LULUCF) between 1990 and 2013. Over the same period, emissions of methane (CH_4) decreased by 58.9 per cent, while emissions of nitrous oxide (N_2O) decreased by 51.9 per cent. The combined fluorinated gases (F-gases), such as perfluorocarbons (PFCs), hydrofluorocarbons (HFCs) and sulphur hexafluoride (SF_6), decreased by 2.1 per cent over the same period. The emission trends were driven mainly by a move away from coal-fired electricity generation towards the use of natural gas and renewable energy sources and improvements in end-use efficiency, tighter regulation of landfills, including increased flaring and utilisation of CH_4, and the use of abatement technology in adipic acid and nitric acid manufacture.

9. The ERT noted that, during the period 1990–2013, the United Kingdom's gross domestic product (GDP) per capita increased by 39.7 per cent, while GHG emissions per GDP unit and GHG emissions per capita decreased by 54.4 and 36.3 per cent, respectively. Table 2 below illustrates the emission trends by sector and some of the economic indicators relevant to GHG emissions for the United Kingdom.

Table 2
Greenhouse gas emissions by sector and some indicators relevant to greenhouse gas emissions for the United Kingdom of Great Britain and Northern Ireland for the period 1990–2013

	GHG emissions (kt CO_2 eq)					*Change (%)*		*Share by sector (%)*	
Sector	*1990*	*2000*	*2010*	*2012*	*2013*	*1990–2013*	*2012–2013*	*1990*	*2013*
1. Energy	610 778.82	559 427.42	503 239.05	480 414.25	468 874.97	–23.2	–2.4	75.7	81.4
A1. Energy industries	237 886.18	200 068.81	194 051.03	191 880.58	179 056.73	–24.7	–6.7	29.5	31.1
A2. Manufacturing industries and construction	97 645.45	91 758.23	61 249.90	55 362.17	57 263.33	–41.4	3.4	12.1	9.9
A3. Transport	116 252.88	123 678.09	117 629.29	115 638.78	114 663.90	–1.4	–0.8	14.4	19.9
A4.–A5. Other	117 355.68	121 859.38	116 928.90	105 292.65	106 521.67	–9.2	1.2	14.5	18.5
B. Fugitive emissions from fuels	41 638.62	22 062.91	13 379.93	12 240.07	11 369.35	–72.7	–7.1	5.2	2.0
C. CO_2 transport and storage	NO	NO	NO	NO	NO	NA	NA	NA	NA
2. IPPU	66 440.95	41 120.88	34 543.09	32 695.09	34 555.85	–48.0	5.7	8.2	6.0
3. Agriculture	60 491.30	56 374.50	50 286.23	49 660.19	49 518.40	–18.1	–0.3	7.5	8.6

[2] In this report, the term "total GHG emissions" refers to the aggregated national GHG emissions expressed in terms of carbon dioxide equivalent excluding land use, land-use change and forestry, unless otherwise specified. Values in this paragraph are calculated based on the 2015 inventory submission of 30 October 2015, version 1.

Sector	GHG emissions (kt CO_2 eq)					Change (%)		Share by sector (%)	
	1990	*2000*	*2010*	*2012*	*2013*	*1990–2013*	*2012–2013*	*1990*	*2013*
4. LULUCF	3 983.08	848.77	–4 272.51	–4 956.58	–5 244.33	–231.7	5.8	NA	NA
5. Waste	69 512.31	66 908.17	31 708.12	26 452.33	22 746.76	–67.3	–14.0	8.6	4.0
6. Other	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0
Indirect CO_2	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NA	NA	NA	NA
Total GHG emissions without LULUCF	**807 223.37**	**723 830.95**	**619 776.48**	**589 221.87**	**575 695.98**	**–28.7**	**–2.3**	**100.0**	**100.0**
Total GHG emissions with LULUCF	**811 206.45**	**724 679.73**	**615 503.97**	**584 265.29**	**570 451.65**	**–29.7**	**–2.4**	**NA**	**NA**
Indicators									
GDP per capita (thousands 2011 USD using PPP)	26.42	32.54	36.24	36.54	36.91	39.7	1.0		
GHG emissions without LULUCF per capita (t CO_2 eq)	14.10	12.29	9.87	9.25	8.98	–36.3	–2.9		
GHG emissions without LULUCF per GDP unit (kg CO_2 eq per 2011 USD using PPP)	0.53	0.38	0.27	0.25	0.24	–54.4	–3.9		

Sources: (1) GHG emission data: United Kingdom's 2015 annual inventory submission, version 1; (2) GDP per capita data: World Bank.

Note: The ratios per capita and per GDP unit as well as the changes in emissions and the shares by sector are calculated relative to total GHG emissions without LULUCF using the exact (not rounded) values, and may therefore differ from the ratio calculated with the rounded numbers provided in the table.

Abbreviations: GDP = gross domestic product, GHG = greenhouse gas, IPPU = industrial processes and product use, LULUCF = land use, land-use change and forestry, NA = not applicable, NE = not estimated, NO = not occurring, PPP = purchasing power parity.

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

10. In its BR2 and CTF tables 2(a)–(f), the United Kingdom reported a description of its target, including associated conditions and assumptions. CTF tables 2(a)–(f) contain the required information in relation to the description of the Party's emission reduction target, such as the base year by gas, the sectors covered and the global warming potential (GWP) value used. Further information on the target and the assumptions, conditions and methodologies related to the target is provided in chapter 2 of the BR2 and in this report (see para. 12 below).

11. 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 European Union (EU) economy-wide emission reduction target of 20 per cent below the 1990 level by 2020. The EU offered to move to a 30 per cent reduction on the

condition that other developed countries commit to a comparable target and developing countries contribute according to their responsibilities and respective capabilities under a new global climate change agreement.

12. The target for the EU and its member States is formalized in the EU 2020 climate and energy package. This legislative package regulates emissions of CO_2, CH_4, N_2O, HFCs, PFCs and SF_6 using GWP values from the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (AR4) to aggregate the GHG emissions of the EU up to 2020. Emissions and removals from the LULUCF sector are not included in the quantified economy-wide emission reduction target under the Convention. The EU generally allows its member States to use units from the Kyoto Protocol mechanisms as well as new market mechanisms for compliance purposes, subject to a number of restrictions in terms of origin and type of project and up to an established limit. Companies can make use of such units to fulfil their requirements under the EU Emissions Trading System (EU ETS).

13. The EU 2020 climate and energy package includes the EU ETS and the effort-sharing decision (ESD) (see chapter II.C.1 below). Further information on this package is provided in chapter 2 of the BR2. The EU ETS covers mainly point emissions sources in the energy, industry and aviation sectors. For the period 2013–2020, an EU-wide cap has been put in place with the goal of reducing emissions by 21 per cent below the 2005 level by 2020. Emissions from sectors covered by the ESD are regulated by targets specific to each member State, which leads to an aggregate reduction at the EU level of 10 per cent below the 2005 level by 2020.

14. Under the ESD, the United Kingdom has a target to reduce its total emissions to 16 per cent below the 2005 level by 2020 from sectors covered by the ESD (non-ETS sectors). National emission targets for non-ETS sectors for 2020 have been translated into binding quantified annual emission allocations (AEAs) for the period 2013–2020. The United Kingdom's AEAs change following a linear path from 358,740 kt of carbon dioxide equivalent (CO_2 eq) in 2013 to 327,100 kt CO_2 eq in 2020.[3]

15. The United Kingdom passed the Climate Change Act in November 2008, which established a national legally binding framework for the reduction of GHG emissions. The Climate Change Act provides the framework for domestic action to reduce GHG emissions by at least 34 per cent below the 1990 level by 2020 and by at least 80 per cent below the 1990 level by 2050. It also establishes a series of carbon budgets that set a limit on the quantity of GHG emissions that the United Kingdom can emit over a five-year period. At the time of submitting its BR2, the United Kingdom had agreed four carbon budgets, namely 2008–2012, 2013–2017, 2018–2022 and 2023–2027 (see the figure below). A fifth carbon budget for the period 2028–2032 will be agreed in 2016.

16. The coverage of the targets comprises the United Kingdom territory only and does not include Crown Dependencies or Overseas Territories. The carbon budgets cover the sectors covered by the ETS and non-ETS sectors, in addition to the impact of LULUCF, but exclude international aviation and shipping. Under the Climate Change Act 2008, at the end of a budget period, the United Kingdom can 'bank' some or all of any surplus from one carbon budget into the next budgetary period. Before the Government of the United Kingdom reaches a decision, advice must be sought from the independent Committee on

[3] European Commission decision 2013/162/EU of 26 March 2013 "on determining member States' annual emission allocations for the period from 2013 to 2020 pursuant to Decision No. 406/2009/EC of the European Parliament and of the Council" and European Commission implementing decision 2013/634/EU of 31 October 2013 "on the adjustments to member States' annual emission allocations for the period from 2013 to 2020 pursuant to Decision No. 406/2009/EC of the European Parliament and of the Council".

Climate Change, and consultation with the Devolved Administrations (Governments of Northern Ireland, Scotland and Wales) must take place, as action by these administrations supports the United Kingdom's programme. In accordance with advice received from the Committee on Climate Change, in 2014, the Government took the decision not to bank 36,000 kt CO_2 eq[4] of surplus emissions from the first carbon budget (2008–2012).

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

17. This chapter provides information on the review of the reporting by the United Kingdom on the progress made in reducing emissions in relation to the target, mitigation actions taken to achieve its target, and the use of units from market-based mechanisms and LULUCF.

1. Mitigation actions and their effects

18. In its BR2 and CTF table 3, the United Kingdom reported on the mitigation actions implemented, adopted and planned to achieve its target. The reporting of the mitigation actions is organized by sector and by gas. The United Kingdom included mitigation actions for the LULUCF sector in CTF table 3, but as this sector is not included in its quantified economy-wide emission reduction target, the ERT considers that the United Kingdom should indicate that these mitigation actions do not contribute towards achieving the target. To improve the transparency of reporting, the ERT recommends that the United Kingdom indicate in a footnote that its mitigation actions in the LULUCF sector do not contribute towards achieving the target. Further information on the mitigation actions related to the Party's target is provided in chapter 3 of the BR2 and in this report (see para. 30 below).

19. The ERT noted that the BR2 states that seven mitigation actions have expired, but CTF table 3 reports their status as "implemented". During the review, in response to a question raised by the ERT, the United Kingdom explained that these expired mitigation actions reported in CTF table 3 are considered to have expired but still provide legacy carbon savings. The United Kingdom further explained that the software for reporting CTF tables did not include this circumstance as an option for reporting on the status of mitigation actions and therefore it entered the status "implemented". To improve the transparency of reporting, the ERT recommends that the United Kingdom include this information as a custom footnote to CTF table 3, in order to clarify the status of those expired mitigation actions that have been reported as "implemented".

20. The Party's CTF table 3 does not specify the year for which the estimated mitigation impacts of the actions are calculated, but this information is included in the BR2. During the review, in response to a question raised by the ERT, the United Kingdom clarified that the software which converts the CTF tables into a portable document format had removed the date for the mitigation impact; as there are no opportunities to preview CTF tables in their final format before submission, this issue was beyond the control of the Party.

21. The GHG mitigation impact of several actions is indicated as being "IE", which is explained in the table footnote to mean "included elsewhere", but this term is not consistently used throughout CTF table 3. For some mitigation actions, it appears to refer to the fact that the mitigation impact could not be calculated; for some, the effect is included in the mitigation impact of another action; and for others, this is reported to be included in

[4] The United Kingdom specified that this surplus estimate is significant to the nearest million tonne of CO_2 eq.

the GHG emission projections "baseline", although it was not clear to the ERT what was meant by that.

22. During the review, in response to a question raised by the ERT, the United Kingdom clarified that the quantified impacts of some of the mitigation actions that are reported as being "included elsewhere" are not currently available. It further explained that for these mitigation actions, "included elsewhere" means that their impacts are accounted for in total GHG emission projections, which include all mitigation actions implemented before 2009 but excludes those implemented and adopted between 2009 and 2015 (referred to as the "baseline" in the BR2, which is actually a post-2009 'without measures' (WOM) scenario). The United Kingdom explained that it has not yet developed a scenario without pre-2009 mitigation actions but is working towards quantifying the impact of more actions.

23. The ERT acknowledges the additional information made available during the review and recommends that the United Kingdom enhance the transparency of its reporting on the impacts of individual mitigation actions by reporting a clear and specific explanation of what the estimated GHG savings effect refers to, and by explaining the reason why it could not report a quantified impact for some individual mitigation actions. The ERT noted that the transparency of reporting could be further enhanced by describing the mitigation actions in the same order in the text and in any table in which they appear.

24. In its BR2, the United Kingdom described its domestic institutional arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of the progress made towards its target, but it did not explicitly indicate whether or not these arrangements have changed since the BR1. During the review, the Party confirmed that there were no changes since the BR1. To improve the transparency of reporting, the ERT recommends that the United Kingdom include in its next BR a statement on changes, or the absence thereof, regarding its domestic institutional arrangements.

25. The United Kingdom's Climate Change Act (see para. 15 above) sets out the domestic arrangements for the process of self-assessment of compliance with emission reductions required by science, and it includes national rules for taking action against non-compliance with the national carbon budgets. The United Kingdom's domestic monitoring system gives an important role to the independent Committee on Climate Change (see para. 16 above), which advises the Government on setting the level of carbon budgets. It includes ex ante (projections) and ex post (GHG inventories) evaluations, an annual report of the Committee on Climate Change on progress against the carbon budgets and the Government's response to that annual progress report. All of these reports are publicly available.

26. The BR2 does not include the information on the assessment of economic and social consequences of response measures, which the UNFCCC reporting guidelines on BRs encourage Parties to provide. The ERT reiterates the encouragement made in the report on the technical review of the BR1 for the Party to provide, to the extent possible, this information in future BRs.

27. The key overarching 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. This package is supplemented by renewable energy and energy efficiency legislation and legislative proposals on the 2020 targets for CO_2 emissions from cars and vans, the carbon capture and storage directive, and the general programmes for environmental conservation, namely the 7th Environment Action Programme and the Clean Air Policy Package (see table 3 below).

28. 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 N_2O emissions from chemical industries, PFC emissions from aluminium production and CO_2 emissions from industrial processes (since 2013).

29. The ESD became operational in 2013 and covers sectors outside the EU ETS, including transport (excluding domestic and international aviation, and international maritime transport), residential and commercial buildings, agriculture, waste and other sectors, together accounting for 55–60 per cent of the GHG emissions of the EU. The ESD aims to decrease GHG emissions in the EU by 10 per cent below the 2005 level by 2020 and includes binding annual targets for each member State for 2013–2020, which are underpinned by the national policies and actions of the member States (see paras. 14–16 above).

30. At the national level, the United Kingdom introduced policies to achieve its targets under the EU and its domestic carbon budgets. The key policy framework guiding the United Kingdom's climate action is its Climate Change Act of 2008. The policies that are expected to have the most significant mitigation effect are the new energy supply policies, promoting renewable energy and low-carbon electricity production (which aim to avoid emissions of 25,097 kt CO_2 eq in 2020), and policies aimed at improving energy efficiency, such as the Building Regulations (17,112 kt CO_2 eq of avoided emissions in 2020), products policies (13,047 kt CO_2 eq of avoided emissions in 2020), the Renewable Transport Fuel Obligation (8,318 kt CO_2 eq of avoided emissions in 2020) and fuel efficiency policies in the transport sector (7,999 kt CO_2 eq of avoided emissions in 2020).

31. The estimated GHG emissions avoided in 2020 differ considerably between the BR2 and BR1 for some measures, such as for the new energy supply policies (25,097 kt CO_2 eq in BR2 compared to 73,113 kt CO_2 eq in BR1). In response to a question raised by the ERT, the United Kingdom explained that these differences are due to various reasons, depending on the specific policy. The reasons include: a downward revision of the savings potential; improvements in the assessment methodology, in the allocation of savings between measures and in the distinction between the effect of committed and planned funding; and improvements in the revised assumptions about household use and replacement of natural gas boilers.

32. The BR2 highlights the domestic mitigation actions that are under development. Of these, the planned mitigation actions with the highest estimated GHG emission savings are the Renewable Heat Incentive, the Future Supplier Obligation (extension of the Energy Company Obligation) and the Renewable Transport Fuel Obligation (increased target).

33. Regarding the planned mitigation actions, the Party stated in its BR2 that some of these (such as the Renewable Heat Incentive, the Future Supplier Obligation and car and van fuel efficiency policies) have been affected by the Government's Spending Review of 25 November 2015, setting out the Government's plans for the next five years, which took place after the publication of the projections. In response to a question raised by the ERT, the United Kingdom confirmed that the changes in these policies are still under development and in some cases subject to public consultation, but given that most policies remain unchanged, it does not expect a significant impact on how it will achieve its 2020 targets (under both the ESD and the Climate Change Act). The Party stated that further details on any changes in these policies will be provided in the next BR submission and that the next publication of the projections will include the full effects of the changes to policies from the Spending Review. Table 3 below provides a concise summary of the key mitigation actions and estimates of their mitigation effects reported by the United Kingdom to achieve its target.

Table 3
Summary of information on mitigation actions and their impacts reported by the United Kingdom of Great Britain and Northern Ireland[a]

Sector affected	*List of key mitigation actions*	*Estimate of mitigation impact in 2020 (kt CO_2 eq)*	*Estimate of mitigation impact in 2030 (kt CO_2 eq)*
Policy framework and cross-sectoral measures	Climate Change Act (2008)	NE	NE
	EU Emissions Trading System (2005)	NE	NE
Energy, including:			
Energy supply, including renewable and low-carbon electricity supply	New energy supply policies[b]	25 097	37 901
Transport	Car fuel efficiency policies	6 226	15 529
	Renewable Transport Fuel Obligation (current target)	2 754	2 926
	Van fuel efficiency policies	965	2 988
	HGV fuel efficiency policies and HGV natural gas policy	808	1 551
Renewable energy	Renewable Heat Incentive (implemented)	1 837	1 832
Energy efficiency	Building Regulations, Part L (all requirements)	17 112	12 515
	Product policy (EU directive on ecodesign) (implemented and adopted)	13 047	13 449
	Smart metering	2 794	2 835
	CRC Energy Efficiency Scheme	1 449	705
	Energy Company Obligation	726	718
	Energy Savings Opportunity scheme	904	876
IPPU	F-gas regulation	4 717	12 653
Agriculture	Agricultural Action Plan	2 972	3 607
Waste	Measures aimed at increasing recycling/reuse[c]	NE	NE

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

Abbreviations: CRC = carbon reduction commitment, EU = European Union, F-gas = fluorinated gas, GHG = greenhouse gas, HGV = heavy goods vehicle, IPPU = industrial processes and product use, NE = not estimated.

[a] A full list of the mitigation actions is included in chapter 3 of the United Kingdom's second biennial report.

[b] The GHG savings include the effects of policies related to meeting the United Kingdom's overall renewable energy target for 2020 as set out in the EU renewable energy directive and policies aimed at promoting low-carbon electricity generation (nuclear, and carbon capture and storage).

[c] These include measures to implement the EU waste framework directive (2008/98/EC), the EU landfill directive (1999/31/EC) and the United Kingdom landfill tax. There are other waste measures targeting other waste streams, such as the EU waste incineration directive (2000/76/EC).

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

34. The United Kingdom reported in CTF table 4 and table 4(b) its use of units from market-based mechanisms, and provided information with respect to LULUCF activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol in annex 1 to its BR2 (table 4(a)II). Information was provided for 2013 and 2014.

35. The BR2 and CTF table 4 do not include the information required by the UNFCCC reporting guidelines on BRs on annual total GHG emissions excluding LULUCF for any of the years required (1990, 2010, 2012 and 2013). During the review, the United Kingdom explained that, on the basis of footnote d to CTF table 4, it interpreted that this information was not required to be reported within CTF table 4. However, because footnote d applies to information on the LULUCF contribution only, to improve the completeness of reporting, the ERT recommends that the United Kingdom provide in its next BR total emissions excluding LULUCF for all the years identified in CTF table 4.

36. The ERT noted that in CTF tables 4(a)I and 4(b), there is a custom footnote that says "LULUCF emissions are captured in Table 1". Furthermore, the ERT noted that the United Kingdom presented in the BR2 information on the contribution from LULUCF with regard to Articles 3.3 and 3.4 of the Kyoto Protocol, which is not reported in the CTF tables. The ERT noted that emissions and removals from the LULUCF sector are excluded from the EU 2020 target under the Convention (see para. 12 above) and information in the BRs and CTF tables on the progress towards achievement of the target has to be consistent with this specificity. The ERT recommends that the United Kingdom, in its next BR and CTF tables 4, 4(a)I, 4(a)II and 4(b), report transparently and consistently on the contribution from LULUCF by specifying that LULUCF is not covered by the joint EU quantified economy-wide emission target and that, as such, the sector cannot be accounted for in the assessment of its progress towards the target.

37. The ERT noted that the United Kingdom reported in CTF tables 4 and 4(b) a quantity of units from the Kyoto Protocol equivalent to 43,858.85 kt CO_2 eq for 2014. The ERT also noted that the term "NO" is used by the Party in its reporting of information on the quantity of units from market-based mechanisms under the Convention in CTF tables 4 and 4(b) for the year 2013, and that the United Kingdom did not explain this term. During the review, in response to a question raised by the ERT, the United Kingdom clarified that the term "NO" used for 2013 meant "not occurring" and that the Party does not intend to use units from market-based mechanisms to achieve its target. The ERT recommends that the United Kingdom improve the transparency of its reporting by defining all terms used and by clearly stating that it does not intend to use units from market-based mechanisms to achieve its target and by reporting information that is consistent with this statement in its next BR and CTF tables 4 and 4(b).

38. On the basis of the information provided in CTF table 1, annual total GHG emissions in 2013 excluding LULUCF were 575,695.98 kt CO_2 eq, or 28.7 per cent below the 1990 level. In 2013, emissions from the non-ETS sectors relating to the target under the ESD were 348,450 kt CO_2 eq. Table 4 below illustrates the United Kingdom's total GHG emissions, the contribution of LULUCF and the use of units from market-based mechanisms to achieve its target.

Table 4
Summary of information on the use of units from market-based mechanisms and land use, land-use change and forestry as part of the reporting on the progress made by the United Kingdom of Great Britain and Northern Ireland towards the achievement of its target

Year	*Emissions excluding LULUCF (kt CO_2 eq)*	*Contribution from LULUCF (kt CO_2 eq)*[a]	*Emissions including contribution from LULUCF (kt CO_2 eq)*	*Use of units from market-based mechanisms (kt CO_2 eq)*
1990	807 223.37	NA	NA	NA
2010	619 766.48	NA	NA	NA
2011	573 244.92	NA	NA	NA
2012	589 221.87	NA	NA	NA
2013	575 695.98	NA	NA	NA

Sources: The United Kingdom's second biennial report and common tabular format tables 1, 4, 4(a) I, 4(a) II and 4(b).

Abbreviations: LULUCF = land use, land-use change and forestry, NA = not applicable.

[a] The United Kingdom, in common tabular format table 4, reported a contribution from the LULUCF sector. The expert review team did not include these values in the above table as the Party is a European Union (EU) member State, which is bound by the EU-wide unconditional commitment to reduce greenhouse gas emissions by 20 per cent below the 1990 level by 2020, which does not include emissions/removals from LULUCF.

39. To assess the progress towards the achievement of the 2020 target, the ERT noted that the United Kingdom's emission reduction target from sectors not covered by the EU ETS under the EU ESD is 16 per cent below the 2005 base year level (see para. 14 above). In 2013 the United Kingdom's emissions from the sectors not covered by the EU ETS were 2.9 per cent (10,290 kt CO_2 eq) below the AEA under the ESD for that year (see para. 14 above).[5]

40. The ERT noted that the United Kingdom is making progress towards its emission reduction target by implementing mitigation actions in energy supply, residential and commercial buildings, use of renewable fuels in transport, improvements in CO_2 emissions of vehicles and environmental legislation in the agriculture sector, which the United Kingdom expects to lead to a significant amount of GHG emissions avoided (see table 3 above).

41. Regarding its domestic target, the United Kingdom reported to have met its first carbon budget for the period 2008–2012 with a surplus of 36,000 kt CO_2 eq and to be on track to meet its second carbon budget for the period 2013–2017 with a projected surplus of 60,000 kt CO_2 eq (see the figure below).[6]

3. Projections

42. The United Kingdom reported in its BR2 and CTF table 6(a) updated projections for 2020 and 2030 relative to actual inventory data for 2013 under the 'with measures' (WEM) scenario. Projections are presented on a sectoral basis, using the same sectoral categories as

[5] European Commission. 2015. *Trends and Projections in Europe 2015. Tracking Progress towards Europe's Climate and Energy Targets*. Available at <http://www.eea.europa.eu/publications/trends-and-projections-in-europe-2015>.

[6] The United Kingdom specified that both surplus estimates are significant to the nearest million tonne of CO_2 eq.

used in the chapter on mitigation actions (also referred to as "policies and measures"), and on a gas-by-gas basis for the following GHGs: CO_2, CH_4, N_2O, PFCs, HFCs and SF_6 (treating PFCs, HFCs and SF_6 collectively in each case) as well as nitrogen trifluoride. Projections are also provided in an aggregated format for each sector as well as for a Party total, using GWP values from the IPCC AR4. Emission projections related to fuel sold to ships and aircraft engaged in international transport were reported separately and were not included in the totals, following a recommendation made in the report of the technical review of the BR1. The United Kingdom reported on factors and activities influencing emissions for each sector. Further information on the projections is provided in chapter 4 of the BR2 and in this report (see para. 50 below).

43. The ERT noted that the percentage reductions (change) from 1990 presented in the BR2 (chapter 4, table 12) are presented to the nearest 10 per cent, which is not sufficiently precise given that the absolute values of GHG emissions are reported to two decimal places. Further, this disguises the percentage changes observed for emissions including LULUCF from those excluding LULUCF. The ERT encourages the United Kingdom to enhance the transparency of its reporting by revising the presentation of percentage changes (from 1990) in its next BR in line with the level of significance of the original GHG emission data.

44. The United Kingdom makes reference to a baseline scenario including only pre-2009 policies and measures (PaMs) in chapter 4 of its BR2, but has not reported a WOM scenario in either the CTF tables or the BR2. In addition, the United Kingdom has not reported a 'with additional measures' (WAM) scenario, although the Party reported on planned PaMs. In response to a question raised by the ERT during the review, the United Kingdom stated that it is working towards producing a WOM scenario. The ERT encourages the United Kingdom to provide a WOM scenario and a WAM scenario in its next BR submission.

Overview of projection scenarios

45. The WEM scenario reported by the United Kingdom includes implemented mitigation actions up to November 2015. The definition indicates that the scenario has been prepared according to the "Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications".

Methodology and changes since the previous submission

46. The methodology used in the BR2 is almost identical to that used for the preparation of the emission projections for the sixth national communication (NC6) and BR1. The changes in the methodology are limited to the inclusion of additional implemented and adopted PaMs, the re-estimation of the impact of PaMs, improved modelling and revised fossil fuel price and economic growth data.

47. To prepare its projections, the United Kingdom relied on the following key underlying assumptions: population trends, growth in the number of households, international energy prices (coal, oil and gas), United Kingdom and world GDP growth rates, EU ETS carbon price, electricity generation carbon price, and USD and Euro exchange rates, as reported in CTF table 5 and the BR2 (table 5 of annex 1 to the text of BR2). These assumptions were updated on the basis of the most recent economic developments known at the time of the reporting on projections.

48. The United Kingdom's Office for Budget Responsibility produces economic assumptions and projections for the Government. The United Kingdom GDP growth rates are based on the July 2015 *Economic and Fiscal Outlook* and the June 2015 *Fiscal*

Sustainability Report. World GDP growth rates are based on the International Monetary Fund report of April 2015, *World Economic Outlook*. Population projections are developed by the United Kingdom's Office of National Statistics. Household projections are produced by the Department of Communities and Local Government, and these projections combine the population assumptions with household formation propensities. Fuel price and carbon assumptions are produced by the Department of Energy and Climate Change and are updated annually. References to the key underlying assumptions are provided in chapter 4 of the BR2.

49. Sensitivity analyses were conducted on the basis of low and high fossil fuel prices and low and high GDP rates. The fossil fuel price sensitivities were produced by applying an analysis of the drivers of wholesale prices for the main fossil fuels (coal, oil and gas) for the United Kingdom in the overall European energy market. GDP sensitivities were produced by applying a ±25 per cent per annum difference to the GDP assumptions used in the development of the WEM scenario. As a result, four different emission projections were produced. The ERT noted that fossil fuel switching occurs in the low fossil fuel price scenario for 2020, whereby the lower gas prices relative to coal result in lower overall emissions. However, in the longer term (to 2035), the lowest emission projections are associated with the high fossil fuel price scenario.

Results of projections

50. The United Kingdom's total GHG emissions excluding LULUCF in 2020 and 2030 are projected to be 458,204.56 and 422,729.17 kt CO_2 eq, respectively, under the WEM scenario, which represents a decrease of 43.2 and 47.6 per cent, respectively, below the 1990 emission level. The 2020 projections suggest that the United Kingdom will continue contributing to the achievement of the EU target under the Convention (see para. 13 above). In addition, the ERT noted that the United Kingdom expects to meet its second carbon budget for the period 2013–2017 and its domestic target of reducing its emissions by 34 per cent below the 1990 level by 2020 (see para. 15 above and the figure below). The ERT noted that the reporting of projected emissions for the EU ETS and non-ETS sectors separately would increase transparency and would facilitate assessment by the ERT of the United Kingdom's progress towards its emission reduction target.

51. According to the projections reported by sector, the most significant GHG emission reductions under the WEM scenario from 1990 to 2020 will occur in the energy sector (243,538.48 kt CO_2 eq or 39.9 per cent), followed by the waste sector (54,092.77 kt CO_2 eq or 77.8 per cent), the industrial processes and product use sector (39,263.57 kt CO_2 eq or 59.1 per cent) and the agriculture sector (12,124.01 kt CO_2 eq or 20.0 per cent). GHG emissions from the transport subsector are projected to decrease by 9,091.90 kt CO_2 eq (7.4 per cent) below the 1990 emission level by 2020.

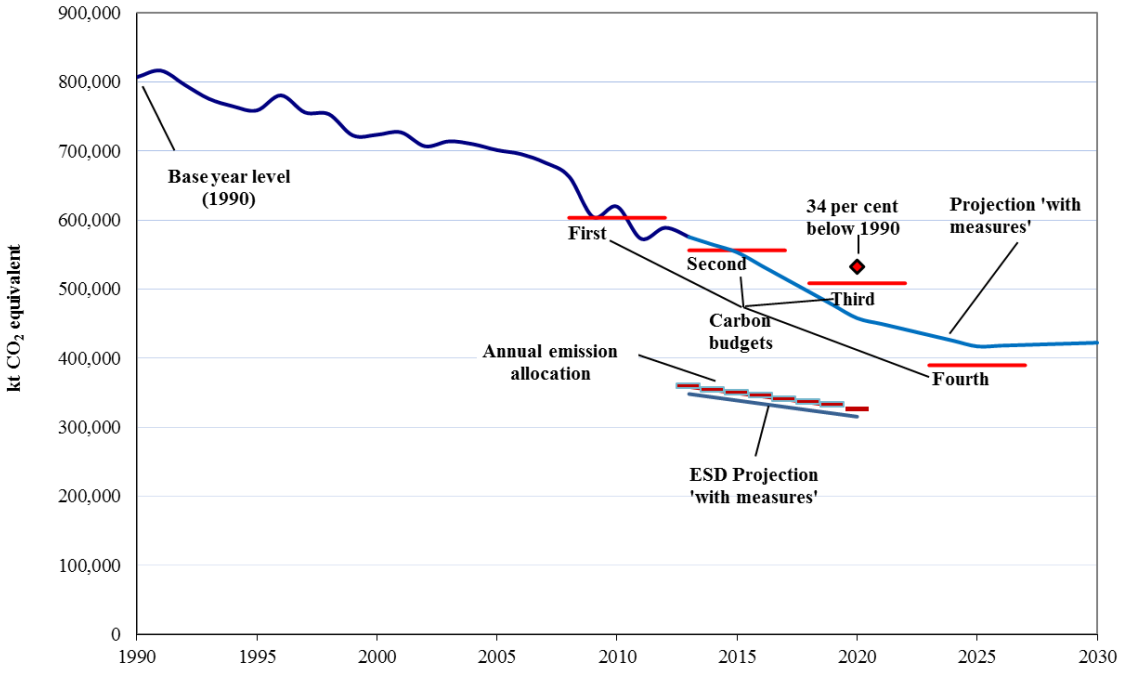
52. For the 2030 projection, the most significant reductions will occur in the energy sector (270,688.90 kt CO_2 eq or 44.3 per cent), followed by the waste sector (55,315.80 kt CO_2 eq or 79.6 per cent), the industrial processes and product use sector (46,859.83 kt CO_2 eq or 70.5 per cent) and the transport sector (14,092.63 kt CO_2 eq or 11.5 per cent). In 2030, emissions from the agriculture sector are projected to decrease by 11,629.61 kt CO_2 eq (19.2 per cent) below the 1990 emission level.

53. According to the projections reported by gas, reductions in CO_2 emissions are expected to contribute the most to the Party's overall emission reductions. Under the WEM scenario, reductions in CO_2 emissions make up approximately 64.1 per cent of the aggregate GHG emission reductions below the 1990 level by 2020 (223,844.01 kt CO_2 eq), followed by CH_4 with 25.6 per cent of the emission reductions (89,341.01 kt CO_2 eq) and N_2O with 8.6 per cent of the emission reductions (30,010.41 kt CO_2 eq). In 2030, reductions in CO_2 emissions make up 64.8 per cent (249,375.130 kt CO_2 eq) of the

aggregate reductions below the 1990 emission level, followed by CH_4 with 24.0 per cent of the emission reductions (92,147.16 kt CO_2 eq) and N_2O with 7.9 per cent (30,512.17 kt CO_2 eq).

54. The projected emission levels under the WEM scenario for total GHG emissions, the AEAs for the non-ETS sectors and the United Kingdom's projections of GHG emission from the non-ETS sectors are presented in the figure below.

Greenhouse gas emission projections by the United Kingdom of Great Britain and Northern Ireland



Sources: (1) Data for the years 1990–2013: the United Kingdom's 2015 annual inventory submission, version 1 of 30 October 2015; total GHG emissions excluding land use, land-use change and forestry; (2) Data for the years 2014–2030: the United Kingdom's second biennial report; total GHG emissions excluding land use, land-use change and forestry; (3) Data for ESD projections 'with measures' and annual emission allocation: European Commission. 2015. *Trends and Projections in Europe 2015 – Tracking Progress Towards Europe's Climate and Energy Targets*.

Note: Unlike the quantified economy-wide emission reduction target under the Convention, carbon budget performance is calculated on the basis of emissions including land use, land-use change and forestry. The calculation also takes into account emissions trading. This calculation is described in chapter 2 of the United Kingdom's second biennial report.

Note: The United Kingdom's GHG emission projections are produced in the autumn of each year. As ESD projections were provided to the European Commission in April 2015, these were based on a set of projections produced one year earlier than those included in the second biennial report.

Abbreviations: ESD = effort-sharing decision, GHG = greenhouse gas.

55. The emission projections reported are an update on those reported in the BR1 (see para. 46 above). Furthermore, improvements in historic data on emissions in the national inventory have been taken into account. The net effect of the changes is that emission

projections in 2020 are 43 per cent below the 1990 emissions level (compared with 26 per cent in the BR1). See paragraph 31 above for the key factors behind this change.

56. The ERT noted a number of areas where the descriptions of the projections trends and the basis for projection assumptions could be improved, including: description of the future trend in N_2O emissions; specification of the national inventory on which the LULUCF projections are based; and the inclusion of fuel combustion in the national projections for the agriculture sector. During the review week, in response to a question raised by the ERT, the United Kingdom clarified which annual inventory submission was used for the LULUCF projections and clarified that fuel combustion in agriculture is reported along with agricultural production emissions within the framework of the national carbon budget. The ERT noted that the United Kingdom could enhance the transparency of its reporting by providing this information in its next BR, and observed that undertaking further quality control activities in the preparation of its submissions would also enhance the transparency of its reporting.

Assessment of aggregate effects of policies and measures

57. The ERT acknowledged information submitted by the United Kingdom on the estimated and expected effects of PaMs in terms of emissions avoided, for the years 2013–2035. However, this information was not prepared in accordance with the WEM scenario compared with the WOM scenario. In response to a question raised by the ERT during the review, the United Kingdom stated that it is working towards producing a full WOM scenario (see para. 44 above).

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

58. In its BR2, the United Kingdom reported information on the provision of financial, technological and capacity-building support required under the Convention. The BR2 includes information on the national approach to tracking and reporting the provision of support, indicators, delivery mechanisms used and allocation channels tracked. The United Kingdom reported a description of the methodology used to report financial support, including underlying assumptions.

59. The United Kingdom provided details on what new and additional support it has provided and clarified how this support is new and additional (see para. 69 below). Further information on the Party's provision of support to developing country Parties is provided in chapter 5 of the BR2.

60. However, the ERT assessed that the information reported by the United Kingdom on its approach to tracking and reporting the provision of technological and capacity-building support to non-Annex I Parties is not fully transparent, because no specific information was reported on the indicators, assumptions and methodologies of the tracking system used to produce information on such support (see para. 62 below).

61. During the review, in response to a question raised by the ERT, the United Kingdom clarified that it has comprehensive monitoring and evaluation systems in place that record key features of projects being supported through its International Climate Fund (ICF), such as spend amounts and information on which funds and programmes are receiving this money, what the finance is being used for (e.g. the development of low-carbon technology), and the expected and achieved results.

62. The United Kingdom also clarified that key performance indicators on technological support include how a project is providing technological support and the number of low-

carbon technologies (units installed) supported. Key performance indicators on capacity-building include, for example, the level of integration of climate change in national planning as a result of ICF support, the level of institutional knowledge of climate change issues as a result of ICF support and the extent to which ICF intervention is likely to have a transformational impact. Alongside the reporting of results, the United Kingdom also conducts annual reviews to track progress against the project milestones. The United Kingdom publishes these annual reviews on the Development Tracker website.[7] To improve the transparency of reporting, the ERT recommends that the United Kingdom provide in its next BR a more specific description of its approach to tracking and reporting on the provision of technological and capacity-building support to non-Annex I Parties, including relevant indicators, assumptions and methodologies used.

63. The United Kingdom reported on its financial support to non-Annex I Parties for mitigation and adaptation activities, distinguishing, to the extent possible, between them while noting the capacity-building elements of such activities, where relevant.

64. The United Kingdom provided information on the methodology that it adopted for producing information on finance, including its use of the Rio Markers, the EU GHG Monitoring Mechanism Regulation and other methodologies. The methodology used for preparing information on international climate support for the BR2 is transparently described. However, the information reported by the United Kingdom on whether there are any changes to its national approach to tracking the provision of support to non-Annex I Parties is not fully transparent.

65. During the review, in response to a question raised by the ERT, the United Kingdom provided additional information, elaborating on improvements to its national approach to tracking the provision of support to non-Annex I Parties. It has refined its approach by including various internal systems to record the key features of projects being supported through its ICF. The United Kingdom is seeking to strengthen these systems and include more learning elements through its ICF Monitoring, Evaluation and Learning Programme for collecting and reporting information.

66. Since the submission of its BR2, the United Kingdom has put in place the ICF Knowledge Platform, which facilitates a systematic capture of project metadata onto a single tool. Previously, this type of information would have been captured via a data-collection exercise across individual projects. The United Kingdom has also published its key performance indicators for the first time and intends to continue to do this on an annual basis. It is also continuously learning and seeking to improve its management information systems. For example, the climate finance database was upgraded in 2015 to improve data accuracy and the ability to generate data reports. The ERT noted the United Kingdom's efforts and the improvements in its national approach to tracking the provision of financial, technological and capacity-building support to non-Annex I Parties and encourages it to report these improvements in its next BR.

1. Finance

67. In its BR2 and CTF tables 7, 7(a) and 7(b), the United Kingdom reported information on the provision of financial support required under the Convention, including on financial support provided, committed and pledged, allocation channels and annual contributions (see para. 75 below). The summary information was reported for 2013 and 2014.

[7] See <https://devtracker.dfid.gov.uk/>.

68. The United Kingdom described how its resources address the adaptation and mitigation needs of non-Annex I Parties. It also described how those resources assist non-Annex I Parties to mitigate and adapt to the adverse effects of climate change, facilitate economic and social response measures, and contribute to capacity-building and technology transfer related to mitigation and adaptation (see chapters II.D.2 and II.D.3 below). One of the ways the Party addresses these needs is by building in-country support and greater country ownership for low-carbon climate-resilient development. The United Kingdom has an extensive network of officials based in developing countries through the Department for International Development (DFID) and the country offices of the Foreign and Commonwealth Office. This ensures that it has a close relationship with the governments and key organisations in these countries and is able to develop bilateral programmes based on developing country needs. Where the United Kingdom provides finance to multilateral funds and development banks, these organisations deliver programmes that are driven by country needs and will provide finance on the basis of plans submitted by the countries themselves. The United Kingdom also carries out project-level and portfolio-level evaluations to ensure its climate finance is being spent as effectively as possible.

69. The ERT noted that the information reported by the United Kingdom on how it has determined that the financial resources it has provided pursuant to Article 4, paragraph 3, of the Convention are new and additional is not fully transparent. During the review, the United Kingdom explained how it determines whether such financial resources are new and additional. The United Kingdom highlighted that it counts the full value of the ICF spend and the full value of the eligible Prosperity Fund spend as new and additional financial resources. All spend is classified as official development assistance (ODA) and is disbursed through all types of financial instrument.

70. The United Kingdom reported in its BR2 that it needs to integrate climate and development finance and that it no longer makes sense to insist that climate finance be additional to ODA. The United Kingdom reported that it is providing new levels of climate finance in addition to historic levels of ODA, and that the provision of climate finance is not resulting in a diversion of wider development spend. As it was not clear to the ERT where the new levels of climate finance specifically came from, in response to a question raised during the review, the United Kingdom specified that, in line with growth in its gross national income (GNI), the percentage of ODA to GNI has increased from 0.5 per cent to 0.7 per cent since 2009. The ERT acknowledges the additional information made available during the review, and recommends that the United Kingdom improve the transparency of its reporting by providing in its next BR a clear definition of new and additional financial resources, including relevant information such as that made available to the ERT during the review.

71. The United Kingdom reported information on its private financial flows from bilateral sources directed towards mitigation and adaptation activities in non-Annex I Parties. It also reported information on PaMs that promote private investment in mitigation and adaptation activities in developing country Parties (see para. 80 below). In addition, the United Kingdom provided information on the types of instrument used in the provision of its assistance (see para. 77 below).

72. The BR2 does not include the information required by the UNFCCC reporting guidelines on BRs on how the United Kingdom defines funds as being "climate-specific" in CTF tables 7, 7(a) and 7(b). During the review, the United Kingdom provided additional information, explaining that it considers as climate-specific all of its financial contributions to multilateral funds that go towards activities that are deemed as being climate-specific. For CTF table 7(b) on contributions through bilateral, regional and other channels, the United Kingdom explained that all its spend goes through a business case approval process. The business case sets out the objectives of the spend and specifies what the financial

contribution will support. These business cases are scrutinised both internally and with expert external reviewers to ensure the proposed spend will deliver value for money and is in line with the objectives of the ICF. Where a programme may have wider objectives that go beyond climate change, the United Kingdom seeks to ensure that ICF finance is not used to support these other objectives and that only climate-specific support is reported on in the BR2.

73. The ERT acknowledges the additional information made available during the review, and encourages the United Kingdom to provide in its next BR a clear explanation of how it defines funds as being climate-specific, as well as any other relevant information, such as that made available to the ERT during the review.

74. With regard to the most recent financial contributions aimed at enhancing the implementation of the Convention by developing countries, the United Kingdom reported that its main mechanism for delivering climate finance is its ICF. The purpose of the ICF is to support international poverty reduction by help developing countries to adapt to climate change, to take up low-carbon development and to tackle deforestation. Through the Party's ICF, climate finance has been allocated on the basis of climate-related programmes and projects to a large number of countries worldwide, while substantial amounts of finance and action on adaptation are prioritized for the most vulnerable countries, including those in Africa, Asia and forested areas of developing countries.

75. The United Kingdom reported on its climate-specific public financial support provided in 2013 and 2014, totalling USD 1,215.72 million in 2013 and USD 1,460.87 million in 2014. In September 2015, the Prime Minister announced that the United Kingdom will significantly increase its climate finance (to at least 5.8 billion pounds sterling) over the next five years, so that in 2020, the United Kingdom's annual climate finance will be double that in 2014.

76. The BR2 includes detailed information on the financial support provided through multilateral channels, and bilateral and regional channels in 2013 and 2014. More specifically, the United Kingdom contributed through multilateral channels, as reported in its BR2 and in CTF table 7(a), USD 2,175.12 million and 3,005.60 million for 2013 and 2014, respectively; of these, USD 498.74 million and 687.02 million were climate-specific for 2013 and 2014, respectively. These contributions were made to specialized multilateral climate change funds, such as the Global Environment Facility, the Least Developed Countries Fund, the Green Climate Fund and other multilateral climate change funds. The BR2 and CTF table 7(b) also include detailed information on the total financial support provided through bilateral, regional and other channels, of USD 716.98 million and 773.85 million in 2013 and 2014, respectively. As information on the contributions through bilateral, regional and other channels in CTF table 7(b) is organized by name of programme/project rather than by recipient country/region, the ERT cannot evaluate the bilateral channels and regional channels separately. Table 5 includes some of the information reported by the United Kingdom on its provision of financial support.

Table 5
Summary of information on provision of financial support in 2013–2014 by the United Kingdom of Great Britain and Northern Ireland
(Millions of United States dollars)

	Years of disbursement	
Allocation channel of public financial support	*2013*	*2014*
Official development assistance[a]	10 531.08	13 916.35
Climate-specific contributions through multilateral	498.74	687.02

Allocation channel of public financial support	*Years of disbursement*	
	2013	*2014*
channels, including:		
Global Environment Facility	32.83	34.57
Least Developed Countries Fund	78.17	
Green Climate Fund		4.12
Climate Investment Fund	378.36	613.58
Climate Development Knowledge Network	9.38	34.75
Climate-specific contributions through bilateral, regional and other channels	716.98	773.85

[a] *Source*: Query Wizard for International Development Statistics, available at <http://stats.oecd.org/qwids/>.

77. The BR2 provides information on the types of support provided. In terms of the focus of public financial support, as reported in CTF table 7 for 2013, the shares of total public financial support allocated for mitigation, adaptation and cross-cutting projects corresponding to these channels were 24.1, 23.5 and 52.4 per cent, respectively. 48.2 per cent of the total public financial support was allocated through multilateral channels and 51.8 per cent of it was through bilateral, regional and other channels. In 2014, the shares of total public financial support allocated for mitigation, adaptation and cross-cutting projects corresponding to these channels were 10.6, 21.5 and 67.9 per cent, respectively. 54.6 per cent of the total public financial support was allocated through multilateral channels and 45.4 per cent of it was through bilateral, regional and other channels.

78. The ERT noted that in CTF table 7(a) the United Kingdom reported "not applicable" in the column for sectors under financial support through multilateral channels. During the review, the United Kingdom explained that it reported "not applicable" to show that the finance provided to these multilateral channels was not directed to any specific sector. With respect to sectors receiving financial support through bilateral and regional channels, the ERT noted that, in 2013, 34.6 per cent of financial contributions made through bilateral and regional channels was allocated to energy, 25.2 per cent to forestry, 4.9 per cent to agriculture, 4.6 per cent to water and sanitation, while the remaining 30.7 per cent was allocated to funding for cross-cutting multi-sector activities, as reported in CTF table 7(a). The corresponding figures for 2014 were 24.5, 28.2, 8.6, 6.4 and 32.3 per cent for the sectors energy, forestry, agriculture, water and sanitation, cross-cutting multi-sector activities, respectively. Hence, most of the bilateral and regional financial support is allocated to energy, forestry and cross-cutting multi-sector activities.

79. CTF tables 7(a) and 7(b) include information on the types of financial instrument used in the provision of assistance to developing countries, which include grants and equity funds. The ERT noted that the share of the grants provided in 2013 and 2014 was approximately 94 and 95 per cent of the total public financial support, respectively. The ERT noted that, in CTF tables 7(a) and 7(b), all the financial support provided through multilateral, bilateral, regional and other channels is sourced from ODA.

80. In its BR2, the United Kingdom clarified that private finance is mainly related to technologies and services in renewable energy, energy efficiency and resource-efficiency projects in developing countries. It also reported on how it promotes the provision of financial support to developing countries from the private sector through public funds, which it sees as being pivotal to effectively implement the commitment of developed country Parties to jointly mobilize USD 100 billion of financial resources per year by 2020 to address the needs of developing countries. Several examples of how the United Kingdom

is seeking to mobilize private finance, through a range of innovative and transformational projects, are provided in BR2.

81. The United Kingdom explained its efforts in establishing an approach for tracking and reporting private financial flows leveraged by bilateral climate finance for mitigation and adaptation activities in non-Annex I Parties. For example, Government officials (led by the Department for Energy and Climate Change) have been engaging with discussions led by the Organisation for Economic Co-operation and Development (through a process known as the 'Research Collaborative'). These discussions have resulted in the development of an initial methodological framework for identifying leveraged private finance that could be used to calculate mobilized private finance and provide a clearer picture of donor effort towards the USD 100 billion goal. The United Kingdom is engaging in further technical work; for example, DFID is part-funding a sector-level study exploring data and methodologies for estimating private finance that is mobilized for adaptation.

2. Technology development and transfer

82. In its BR2 and CTF table 8, the United Kingdom provided information on measures and activities related to technology transfer, access and deployment benefiting developing countries, including information on activities undertaken by the public and private sectors. The United Kingdom provided examples of support provided for the deployment and enhancement of the endogenous capacities and technologies of non-Annex I Parties (see para. 88 below). However, the ERT noted that the examples reported in CTF table 8 do not distinguish between activities undertaken by the public and private sectors.

83. During the review, in response to a question raised by the ERT, the United Kingdom provided additional information, elaborating on why it could not distinguish between activities undertaken by the public and private sectors. The information provided in CTF table 8 was intended to be a high-level overview setting out some examples of programmes that the United Kingdom has invested in, which have a strong technology focus. The United Kingdom provides the majority of its climate finance by working through trusted delivery partners such as the multilateral development banks, which will disburse donor money into projects on the ground. This can mean complex delivery chains from its funds through to the final recipient. Further, the United Kingdom does not systematically track across its climate finance portfolio who the ultimate end recipient is and what their role is in the project. This is because of the potential complexity of delivery chains.

84. The ERT acknowledges the additional information made available during the review, and recommends that the United Kingdom either distinguish between activities undertaken by the public and private sectors, or provide a clear explanation such as that made available to the ERT during the review, describing why they were not categorized as public or private sector activities.

85. The United Kingdom provided some success stories on technology development and transfer (page 85 of the BR2). For example, the Clean Technology Fund supported the build of the first utility-scale concentrated solar power plant in a developing country (South Africa). Other successes include a carbon capture and storage project, where a full-chain demonstration pilot is being developed in China.

86. The BR2 does not include examples of failure stories, which Parties may include in their BRs, in accordance with the UNFCCC reporting guidelines on BRs. During the review, the United Kingdom stated that, in terms of failure stories, a common theme is the slow pace of implementation. For example, the Green Mini-Grids Africa programme faced unforeseen delays during the project inception phase. Even established multilateral funds such as the Clean Technology Fund face similar challenges, with project approval and disbursement of funds often being delayed.

87. The ERT acknowledges the additional information made available during the review, and encourages the United Kingdom to also provide failure stories related to technology development and transfer for the benefit of non-Annex I Parties in its next BR.

88. The ERT noted that, in its BR2, including CTF table 8, the United Kingdom reported on its measures in relation to technology transfer, in particular, on measures taken to promote, facilitate and finance the transfer and deployment of climate-friendly technologies. In its BR2, the United Kingdom provided information on measures taken to support the development and enhancement of the endogenous capacities and technologies of non-Annex I Parties. For example, the United Kingdom is supporting the Energy and Environment Partnership (EEP) with Southern and East Africa. EEP aims to increase energy supply and access to renewable energy for people on low incomes as well as to promote energy efficiency by demonstrating and deploying new technologies. This programme has helped over 30,000 households primarily living in rural areas to have access to off-grid renewable energy products (primarily photovoltaic technology).

89. The ERT took note of the information provided in CTF table 8 on recipient countries/regions, target areas, measures and involved sectors, as well as sources of funding for these technology transfer programmes. The United Kingdom stressed in its BR2 that many of the ICF programmes actively support some form of technology development or transfer (to a greater or lesser extent, either directly or indirectly), and included in CTF table 8 some specific examples.

3. Capacity-building

90. In its BR2 and CTF table 9, the United Kingdom supplied information on how it provided capacity-building support for mitigation, adaptation and technology that responds to the existing and emerging capacity-building needs identified by non-Annex I Parties.

91. In its CTF table 9, the United Kingdom described individual measures and activities related to capacity-building support in tabular format. However, the ERT noted that the textual information on capacity-building activities, including on individual measures undertaken in the BR2 was very succinct (two paragraphs) and as such was not fully transparent. The ERT encourages the United Kingdom to improve the transparency of its reporting by providing specific descriptions of the individual measures and activities related to capacity-building support in a textual format in its next BR.

92. The United Kingdom reported that it supported climate-related capacity-building activities relating to adaptation, mitigation, and technology development and transfer in multiple areas. The United Kingdom also reported that it responded to the existing and emerging capacity-building needs of non-Annex I Parties by following the principles of country-driven demand, and impact assessment and monitoring. Further, the Party explained that one way it will identify developing country needs is through their intended nationally determined contributions, where a number of developing countries highlighted what their capacity-building support needs were. The United Kingdom also commissioned a study from Ecofys to assess different strategic technical assistance options; in particular, to carry out a gap analysis of technical assistance programmes across a number of ICF priority countries.

93. CTF table 9 includes information describing a number of individual capacity-building measures and activities carried out during the reporting period, such as: strengthening adaptation and resilience to climate change in Kenya; promoting energy efficiency among small and medium enterprises in Indonesia; and helping the Government of Rwanda to build national capacity for creating and managing the National Fund for Climate & Environment. The United Kingdom stressed that many of its ICF programmes

actively support some form of capacity-building (to a greater or lesser extent, either directly or indirectly), and included in CTF table 9 some specific examples.

III. Conclusions

94. The ERT conducted a technical review of the information reported in the BR2 and CTF tables of the United Kingdom in accordance with the UNFCCC reporting guidelines on BRs. The ERT concludes that the reported information is mostly in adherence with the UNFCCC reporting guidelines on BRs and provides an overview on: emissions and removals related to the Party's quantified economy-wide emission reduction target; assumptions, conditions and methodologies related to the attainment of the target; progress made by the United Kingdom in achieving its target; and the Party's provision of support to developing country Parties.

95. The United Kingdom's total GHG emissions excluding LULUCF related to its quantified economy-wide emission reduction target were estimated to be 28.7 per cent below its 1990 level, whereas total GHG emissions including LULUCF were 29.7 per cent below its 1990 level for 2013. The emission decrease was mainly driven by a move away from coal-fired electricity generation towards the use of natural gas and renewable energy sources and improvements in end-use efficiency, tighter regulation of landfills, including increased flaring and utilisation of CH_4, and the use of abatement technology in adipic acid and nitric acid manufacture.

96. Under the Convention, the United Kingdom is 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 the gases CO_2, CH_4, N_2O, HFCs, PFCs and SF_6, expressed using GWP values from the AR4. Emissions and removals from the LULUCF sector are not included in the quantified economy-wide emission reduction target under the Convention. The EU generally allows its member States to use units from the Kyoto Protocol mechanisms as well as new market mechanisms for compliance purposes, subject to a number of restrictions in terms of origin and type of project and up to an established limit. Companies can make use of such units to fulfil their requirements under the EU ETS.

97. Under the ESD, the United Kingdom has a target to reduce its emissions by 16 per cent below the 2005 level by 2020. The United Kingdom's AEAs, which correspond to its national emission target for non-ETS sectors, change linearly from 358,740 kt CO_2 eq in 2013 to 327,100 kt CO_2 eq in 2020. In addition, the United Kingdom committed itself to achieving a domestic target of at least a 34 per cent reduction in emissions below the 1990 level by 2020 and at least an 80 per cent reduction below the 1990 level by 2050.

98. The United Kingdom's main policy framework relating to energy and climate change is its Climate Change Act of 2008. The mitigation effect of the new energy supply policies, promoting renewable energy and low-carbon electricity production, policies aimed at improving energy efficiency (such as the Building Regulations, products policies, the Renewable Transport Fuel Obligation and fuel efficiency policies in the transport sector) are the most significant and are expected to lead to a significant amount of avoided GHG emissions.

99. On the basis of the information provided in CTF table 1, annual total emissions in 2013 were 575,695.98 kt CO_2 eq, or 28.7 per cent below the 1990 level. In 2013, emissions from the non-ETS sectors relating to the target under the ESD were 348,450 kt CO_2 eq, or 2.9 per cent below the United Kingdom's 2013 AEA under the ESD. The United Kingdom does not intend to use units from market-based mechanisms to achieve its target for any of the reported years. The ERT noted that the United Kingdom is making progress towards its

emission reduction target by implementing mitigation actions that deliver significant emission reductions.

100. The GHG emission projections provided by the United Kingdom in its BR2 include those for the WEM scenario only. Under this scenario, emissions are projected to be 43.2 and 47.6 per cent below the 1990 level in 2020 and 2030, respectively. On the basis of the reported information in the BR2 and that published in the report *Trends and Projections in Europe 2015 – Tracking Progress Towards Europe's Climate and Energy Targets*, the ERT concluded that the United Kingdom is on track and expects to meet its second carbon budget for the period 2013–2017, its domestic target of reducing its emissions by at least 34 per cent below the 1990 level by 2020 and its target for non-ETS sectors.

101. The United Kingdom continues to allocate climate financing in line with the climate finance programmes such as the ICF and Prosperity Fund in order to assist developing country Parties to implement the Convention. It has increased its contributions since its NC6/BR1, and its climate-specific public financial support in 2013 and 2014 totalled USD 1,215.72 million and USD 1,460.87 million per year, respectively. For these years, the United Kingdom's support provided for mitigation actions was lower than support provided for adaptation. The highest level of financial support went to projects in energy, forestry and cross-cutting projects, followed by the agriculture and water and sanitation sectors. The United Kingdom also provided information on technology development and transfer, and climate-related capacity-building activities. It stressed that many of the ICF programmes actively support some form of technology development or transfer and capacity-building, to a greater or lesser extent, either directly or indirectly.

102. 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:[8]

(a) Improve the completeness of its reporting by:

(i) Reporting total emissions excluding LULUCF for all the years identified in CTF table 4 (see para. 35 above);

(b) Improve the transparency of its reporting by:

(i) Explicitly stating whether changes have or have not occurred in national inventory arrangements (see para. 6 above);

(ii) Indicating in a footnote that mitigation actions in the LULUCF sector do not contribute to the achievement of the quantified economy-wide emission reduction target (see para. 18 above);

(iii) Including information in a footnote to CTF table 3 to clarify the status of those expired mitigation actions that have been reported as implemented (see para. 19 above);

(iv) Reporting on the impacts of individual mitigation actions by reporting a clear and specific explanation of what the estimated GHG savings effect refers to, and by explaining the reason why it could not report a quantified impact for some individual mitigation actions (see para. 23 above);

(v) Including a statement on changes, or the absence thereof, regarding its domestic institutional arrangements (see para. 24 above);

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

(vi) Reporting transparently and consistently on the contribution from LULUCF by specifying that LULUCF is excluded from the joint EU quantified economy-wide emission reduction target and that, as such, the sector cannot be accounted for in the assessment of its progress towards the target. (see para. 36 above);

(vii) Defining all terms used and clearly stating that it does not intend to use units from market-based mechanisms to achieve its target, and reporting information that is consistent with this statement (see para. 37 above);

(viii) Providing a more specific description of its approach to tracking and reporting the provision of technological support and capacity-building support to non-Annex I Parties, including relevant indicators, assumptions and methodologies used to produce information on support (see para. 62 above);

(ix) Providing a clear definition of new and additional financial resources, as well as other relevant information such as that made available to the ERT during the review (see para. 70 above);

(x) Distinguishing between activities undertaken by the public and private sectors, or providing a clear explanation such as that made available to the ERT during the review, describing why they were not categorized as public or private sector activities (see para. 84 above).

Annex

Documents and information used during the review

A. Reference documents

"UNFCCC biennial reporting guidelines for developed country Parties". Annex to decision 2/CP.17. Available at <http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf#page=4>.

"Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual greenhouse gas inventories". Annex to decision 24/CP.19. Available at <http://unfccc.int/resource/docs/2013/cop19/eng/10a03.pdf#page=2>.

"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>.

FCCC/ARR/2014/GBR. Report on the individual review of the annual submission of the United Kingdom of Great Britain and Northern Ireland submitted in 2014. Available at <http://unfccc.int/resource/docs/2015/arr/gbr.pdf>.

FCCC/IDR.6/GBR/Rev.1. Report of the technical review of the sixth national communication of the United Kingdom of Great Britain and Northern Ireland. Available at <http://unfccc.int/resource/docs/2015/idr/gbr06r01.pdf>.

FCCC/TRR.1/GBR. Report of the technical review of the first biennial report of the United Kingdom of Great Britain and Northern Ireland. Available at <http://unfccc.int/resource/docs/2015/trr/gbr01.pdf>.

2015 greenhouse gas inventory submission of the United Kingdom of Great Britain and Northern Ireland. Available at <http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/8812.php>.

Sixth national communication of the United Kingdom of Great Britain and Northern Ireland. Available at <http://unfccc.int/files/national_reports/annex_i_natcom/submitted_natcom/application/pdf/uk_6nc_and_br1_2013_final_web-access[1].pdf>.

First biennial report of the United Kingdom of Great Britain and Northern Ireland. Available at <http://unfccc.int/files/national_reports/annex_i_natcom/submitted_natcom/application/pdf/uk_6nc_and_br1_2013_final_web-access[1].pdf>.

Common tabular format tables of the first biennial report of the United Kingdom of Great Britain and Northern Ireland. Available at <http://unfccc.int/files/national_reports/biennial_reports_and_iar/biennial_reports_data_interface/application/pdf/gbr_2014_v3.0_formatted.pdf>.

Second biennial report of the United Kingdom of Great Britain and Northern Ireland. Available at <http://unfccc.int/files/national_reports/biennial_reports_and_iar/submitted_biennial_reports/application/pdf/20151218_uk_biennial_report_2_web_accessible.pdf>.

Common tabular format tables of the second biennial report of the United Kingdom of Great Britain and Northern Ireland. Available at <http://unfccc.int/files/national_reports/biennial_reports_and_iar/submitted_biennial_reports/application/pdf/gbr_2016_v1_0_(2)_formatted.pdf>.

B. Additional information used during the review

Responses to questions during the review were received from Ms. Neta Meidáv (Department of Energy and Climate Change), including additional material and the following documents[1] provided by the United Kingdom of Great Britain and Northern Ireland:

European Environment Agency. 2015. *Trends and projections in Europe 2015 — Tracking progress towards Europe's climate and energy targets*. Available at <http://www.eea.europa.eu/publications/trends-and-projections-in-europe-2015>.

[1] Reproduced as received from the Party.