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## Report of the technical review of the second biennial report of Spain

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 Spain, conducted by an expert review team in accordance with the “Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention”.

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## Contents

	<i>Paragraphs</i>	<i>Page</i>
I. Introduction and summary .....	1–6	3
A. Introduction .....	1–2	3
B. Summary.....	3–6	3
II. Technical review of the reported information .....	7–89	4
A. All greenhouse gas emissions and removals related to the quantified economy-wide emission reduction target .....	7–12	4
B. Assumptions, conditions and methodologies related to the attainment of the quantified economy-wide emission reduction target .....	13–18	6
C. Progress made towards the achievement of the quantified economy-wide emission reduction target .....	19–61	8
D. Provision of financial, technological and capacity-building support to developing country Parties.....	62–89	16
III. Conclusions .....	90–98	21
Annex		
Documents and information used during the review.....		23

## I. Introduction and summary

### A. Introduction

1. This report covers the centralized technical review of the second biennial report (BR2)<sup>1</sup> of Spain. 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 Spain, which provided comments that were considered and incorporated, as appropriate, into this final version of the report.

2. The review took place from 6 to 11 June 2016 in Bonn, Germany, and was conducted by the following team of nominated experts from the UNFCCC roster of experts: Ms. Ana Maria Danila (European Union), Ms. Laura Elena Dawidowski (Argentina), Ms. Hongmin Dong (China), Mr. Domenico Gaudio (Italy), Ms. Hana Hamadalla (Sudan), Ms. Diana Harutyunyan (Armenia), Mr. Nicolo Macaluso (Canada), Ms. Neranda Maurice (Saint Lucia), Ms. Sina Wartmann (Germany) and Mr. Benon Bibbu Yassin (Malawi). Ms. Danila and Ms. Dawidowski were the lead reviewers. The review was coordinated by Ms. Verónica Colerio, Mr. Daniel Hooper and Ms. Barbara Muik (UNFCCC secretariat).

### B. Summary

3. The expert review team (ERT) conducted a technical review of the information reported in the BR2 of Spain 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, Spain provided the following additional relevant information:

- (a) The reasons for not reporting the mitigation effects of all mitigation actions;
- (b) The projections for both fuel sold to ships engaged in international transport and aircraft engaged in international transport;
- (c) How the support provided to developing country Parties is new and additional;
- (d) The indicators used to track the provision of technological and capacity-building support to Parties not included in Annex I to the Convention (non-Annex I Parties).

#### 1. Timeliness

4. The BR2 was submitted on 22 December 2015, before the deadline of 1 January 2016 mandated by decision 2/CP.17. The common tabular format (CTF) tables were submitted on 22 December 2015.

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<sup>1</sup> 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.

**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 Spain in its BR2 is 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 Spain**

<i>Section of the biennial report</i>	<i>Completeness</i>	<i>Transparency</i>	<i>Paragraphs with recommendations</i>
Greenhouse gas emissions and trends	Complete	Transparent	
Assumptions, conditions and methodologies related to the attainment of the quantified economy-wide emission reduction target	Complete	Transparent	
Progress in achievement of targets	Mostly complete	Mostly transparent	25, 38, 45
Provision of support to developing country Parties	Mostly complete	Mostly transparent	65, 68

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

6. Spain submitted its BR2 in Spanish without providing an English translation. The ERT encourages Spain to submit an English translation of its next biennial report (BR) in order to facilitate its use in the review process.

**II. Technical review of the reported information**

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

7. Spain 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 Spain’s 2015 annual inventory submission (in section 1.2.1). 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.

8. Further, Spain provided information on changes in the national inventory arrangements since its first biennial report (BR1). The structure of the national inventory system has changed slightly. During the review, Spain provided additional information on the changes to the national system. A new inventory coordinator took office in mid-2014 and three sectoral expert positions were filled by new members of the inventory team between 2013 and 2015. The company responsible for providing technical assistance to the inventory team also changed in mid-2014, when a new team of experts from the consultancy company TRAGSATEC started to provide support for the preparation of the national inventory.

9. The information reported in the BR2 on emission trends is consistent with that reported in the 2015 annual inventory submission of Spain. To reflect the most recently available data, version 1.0 of Spain's 2016 annual inventory submission has been used as the basis for discussion in chapter II.A of this review report.

10. Total GHG emissions<sup>2</sup> excluding emissions and removals from land use, land-use change and forestry (LULUCF) increased by 15.0 per cent between 1990 and 2014, whereas total GHG emissions including net emissions and removals from LULUCF increased by 14.1 per cent over the same period. The ERT acknowledges that the population increase was a key factor in the steep economic growth between 2001 and 2007 and both population increase and economic growth were the main drivers of the emission increase since 1990. Furthermore, the ERT noted the relation between the recent evolution of the Spanish economy and the global financial and economic crisis that began in 2008. The increase in the total GHG emissions can be attributed mainly to carbon dioxide (CO<sub>2</sub>) emissions, which increased by 10.1 per cent (excluding LULUCF) between 1990 and 2014. Over the same period, emissions of methane (CH<sub>4</sub>) increased by 20.2 per cent, while emissions of nitrous oxide (N<sub>2</sub>O) increased by 1.0 per cent. The combined fluorinated gases (F-gases), such as perfluorocarbons (PFCs), hydrofluorocarbons (HFCs) and sulphur hexafluoride (SF<sub>6</sub>), increased by 306 per cent over the same period.

11. Emissions in the energy sector increased by 12.5 per cent during the period 1990–2014 (amounting to an increase of 26,487.42 kt of carbon dioxide equivalent (CO<sub>2</sub> eq)), while emissions increased by 23.8 per cent (7,247.07 kt CO<sub>2</sub> eq) in the industrial processes sector and by 74.7 per cent (6,708.17 kt CO<sub>2</sub> eq) in the waste sector. The emission increases were driven mainly by the increase in energy consumption (including fuels for transportation) that powered the economic growth, the amount of solid waste deposited and the use of HFCs for refrigeration and air conditioning.

12. The ERT noted that, during the period 1990–2014, Spain's gross domestic product (GDP) per capita increased by 31.7 per cent, while GHG emissions per GDP and GHG emissions per capita decreased by 27.0 and 3.8 per cent, respectively. Table 2 below illustrates the emission trends by sector and some of the economic indicators relevant to GHG emissions for Spain.

Table 2

**Greenhouse gas emissions by sector and some indicators relevant to greenhouse gas emissions for Spain for the period 1990–2014**

Sector	GHG emissions (kt CO <sub>2</sub> eq)					Change (%)		Share by sector (%)	
	1990	2000	2010	2013	2014	1990–2014	2013–2014	1990	2014
	1. Energy	211 604.43	289 825.47	265 545.50	239 232.25	238 091.85	12.5	–0.5	74.0
A1. Energy industries	77 793.49	105 515.99	74 681.78	72 787.19	75 726.05	–2.7	4.0	27.2	23.0
A2. Manufacturing industries and construction	44 501.80	58 362.30	50 313.03	43 483.97	40 403.50	–9.2	–7.1	15.6	12.3
A3. Transport	59 137.96	87 259.75	91 989.06	79 450.71	79 878.60	35.1	0.5	20.7	24.3
A4.–A5. Other	26 118.98	34 831.63	45 374.93	38 933.00	37 118.82	42.1	–4.7	9.1	11.3

<sup>2</sup> 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.

Sector	GHG emissions (kt CO <sub>2</sub> eq)					Change (%)		Share by sector (%)	
	1990	2000	2010	2013	2014	1990–2014	2013–2014	1990	2014
	B. Fugitive emissions from fuels	4 052.21	3 855.80	3 186.70	4 577.39	4 964.88	22.5	8.5	1.4
C. CO <sub>2</sub> transport and storage	NO	NO	NO	NO	NO	NA	NA	NA	NA
2. IPPU	30 495.31	42 171.52	42 427.71	36 386.83	37 742.38	23.8	3.7	10.7	11.5
3. Agriculture	34 856.02	40 317.18	37 332.31	36 036.44	37 405.86	7.3	3.8	12.2	11.4
4. LULUCF	–25 366.10	–34 662.51	–33 349.36	–32 109.08	–31 500.65	24.2	–1.9	NA	NA
5. Waste	8 978.01	12 804.56	15 494.64	15 791.76	15 686.18	74.7	–0.7	3.1	4.8
6. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indirect CO <sub>2</sub>	IE, NE	IE, NE	IE, NE	IE, NE	IE, NE	NA	NA	NA	NA
<b>Total GHG emissions without LULUCF</b>	<b>285 933.77</b>	<b>385 118.73</b>	<b>360 800.16</b>	<b>327 447.28</b>	<b>328 926.28</b>	<b>15.0</b>	<b>0.5</b>	<b>100.0</b>	<b>100.0</b>
<b>Total GHG emissions with LULUCF</b>	<b>260 567.68</b>	<b>350 456.22</b>	<b>327 450.80</b>	<b>295 338.20</b>	<b>297 425.62</b>	<b>14.1</b>	<b>0.7</b>	<b>NA</b>	<b>NA</b>
<i>Indicators</i>									
GDP per capita (thousands 2011 USD using PPP)	24.11	30.63	32.98	31.23	31.75	31.7	1.7		
GHG emissions without LULUCF per capita (t CO <sub>2</sub> eq)	7.36	9.57	7.75	7.02	7.08	–3.8	0.8		
GHG emissions without LULUCF per GDP unit (kg CO <sub>2</sub> eq per 2011 USD using PPP)	0.31	0.31	0.23	0.22	0.22	–27.0	–0.9		

Sources: (1) GHG emission data: Spain's 2016 annual inventory submission, version 1.0; (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, IE = included elsewhere, 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

13. In its BR2 and CTF tables 2(a)–(f), Spain 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: a description of the quantified economy-wide reduction target; the base year; the gases and sectors covered; the global warming potential (GWP) values used to estimate the emissions in units of CO<sub>2</sub> eq; and the approach used to count emissions and removals from the LULUCF sector. Further information on the target and the assumptions, conditions and methodologies related to the target is provided in chapter 3 of the BR2.

14. The ERT noted that inconsistencies concerning the assumptions, conditions and methodologies related to the description of the target in CTF tables 2(a)–(f) that were raised in the previous review report have been corrected. The ERT also noted that CTF table 2(c) provides a GWP value for nitrogen trifluoride (NF<sub>3</sub>); however, NF<sub>3</sub> is not included in the target according to both CTF table 2(b) and the information on the target provided in the BR2.

15. For Spain, the Convention entered into force on 21 March 1994. Under the Convention, Spain 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.

16. 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<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs and SF<sub>6</sub> 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).

17. 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 section 3.1 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.

18. Under the ESD, Spain has a target to reduce its total emissions to 10 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. Spain's AEAs change following a linear path from 220,902.86 kt CO<sub>2</sub> eq in 2013 to 208,588.21 kt CO<sub>2</sub> eq in 2020.<sup>3</sup>

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<sup>3</sup> 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”.

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

19. This chapter provides information on the review of the reporting by Spain 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**

20. In its BR2 and CTF table 3, Spain reported on its progress in the achievement of its target and the mitigation actions implemented and planned since its sixth national communication (NC6) and BR1 to achieve its target. Spain has provided information on mitigation actions introduced to achieve its target. The BR2 includes information on mitigation actions organized by sector and by gas. Further information on the mitigation actions related to the Party's target is provided in section 4.1 of the BR2.

21. This report highlights the changes made since the publication of Spain's NC6 and BR1. In its BR2, Spain explained that there were no significant changes in its domestic institutional arrangements, including institutional, legal, administrative and procedural arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of the progress made towards its targets since the publication of its NC6 and BR1.

22. In its BR2, Spain did not report in CTF table 3 the estimated effects of several of its mitigation actions for 2020, including for some significant policies and measures (PaMs) such as the EU ETS, and did not provide an explanation for not reporting this information either in the BR2 or in CTF table 3.

23. During the review, Spain explained that it did not estimate the impacts of measures in cases where the information available was considered insufficiently robust for use in the assessment, or where there was a possibility that some PaMs could overlap. The ERT noted that this explanation is of a general nature and does not provide specific reasons for not estimating the effects of the specific mitigation actions.

24. During the review, Spain provided a copy of a study that analyses actions and their mitigation impacts related to activities under the ESD, the 2020 Diffuse Sectors Road Map: Annexes.<sup>4</sup> The ERT noted that, in the study, Spain has estimated the impacts of measures related to waste separation and recycling; however, in CTF table 3, the impacts of similar types of measures that also include separation and recycling of waste have not been estimated.

25. The ERT recommends that Spain improve the completeness of its reporting in its next BR and/or CTF tables by reporting the estimated mitigation impacts of its PaMs in CTF table 3 or by including explanations for the reasons why such information is not reported. This information could be provided either in the BR or in the footnotes to CTF table 3.

26. Spain provided, to the extent possible, information on the assessment of the economic and social consequences of its response measures. In its BR2, Spain included a reference to an impact assessment system established within the framework of EU

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<sup>4</sup> Ministry of Agriculture, Food and the Environment. 2020 Diffuse Sectors Road Map: Annexes (*Hoja de Ruta de los Sectores Difusos a 2020: Anexos*). Available at <[http://www.magrama.gob.es/es/cambio-climatico/temas/mitigacion-politicas-y-medidas/HojaRuta2020\\_Fichas\\_tcm7-358623.pdf](http://www.magrama.gob.es/es/cambio-climatico/temas/mitigacion-politicas-y-medidas/HojaRuta2020_Fichas_tcm7-358623.pdf)>.



legislation. The impact assessment is based on an integrated approach that analyses both the positive and negative impacts of new policy initiatives and addresses their economic, social and environmental impacts.

27. The ERT noted that in the 2020 Diffuse Sectors Road Map: Annexes, Spain included a detailed analysis of the social and economic consequences of its mitigation actions, performed using the new M3E<sup>5</sup> model developed by the Party. The model was used to analyse each mitigation measure for each year from 2013 to 2020 on the basis of certain input variables. The study shows the positive impact of Spain's 43 measures on some economic and social indicators. The ERT suggests that Spain include the corresponding reference to the analysis in its next BR.

28. In section 4.3 of the BR2, Spain included detailed non-mandatory additional information on the potential economic and social effects of its mitigation measures in third countries (non-EU countries). Spain presented the results of an assessment conducted on the potential positive and negative effects of all implemented actions, aggregated as supranational, national and cross-sectoral measures. Within the cross-sectoral category, the following measures are included: the carbon footprint registry, the Clima project and the CIUDEN and NER300 initiatives. The ERT commends Spain for including the results of the study in the BR.

29. Spain reported, to the extent possible, on the domestic arrangements established for the process of self-assessment of compliance with emission reductions required by science, and on the progress made in the establishment of national rules for taking action against non-compliance with emission reduction targets. Spain stated that, as a member State of the EU, it monitors the progress through its reporting on GHG emissions in accordance with the EU monitoring mechanism regulation (525/2013). Spain compiles national GHG inventories annually, and reports on PaMs and GHG emission projections are compiled every two years.

30. 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<sub>2</sub> emissions from cars and vans, the carbon capture and storage directive, and the general programmes for environmental conservation, namely the 7<sup>th</sup> Environment Action Programme and the Clean Air Policy Package (see table 3 below).

31. In operation since 2005, the EU ETS is a cap-and-trade system that covers all significant energy-intensive installations (mainly large point emissions sources such as power plants and industrial facilities), 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<sub>2</sub>O emissions from chemical industries, PFC emissions from aluminium production and CO<sub>2</sub> emissions from industrial processes (since 2013).

32. The ESD became operational in 2013 and covers sectors outside the EU ETS, including transport (excluding domestic and international aviation, and international maritime transport), residential and commercial buildings, agriculture, 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 para. 15 above).

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<sup>5</sup> Modelling of mitigation measures in Spain.

33. At the national level, Spain introduced policies to achieve its targets under the ESD and domestic emission reduction targets. The key policies reported in the BR2 are related to renewable energy, the industrial processes sector, transportation and buildings. The mitigation effect related to the introduction of a tax for the use of F-gases is the most significant. Other policies that have delivered significant emission reductions are the adoption of emission reduction targets to be met by car manufacturers that are part of mandatory EU policies, the promotion of modal changes in the transportation sector and the inclusion of subsidies and rules to improve energy efficiency in buildings.

34. The BR2 highlights the mitigation actions that are under development, including regulatory instruments for the improvement of energy efficiency in: transportation, buildings, industries, and the agriculture and fisheries sectors. Spain also plans to promote carbon dioxide capture and storage (CCS) projects through the construction of a new research centre focused on CCS. The effects of most of these planned actions were not reported by Spain in the BR2 or in CTF table 3 (see para. 22 above).

35. Table 3 below provides a concise summary of the key mitigation actions and estimates of their mitigation effects reported by Spain to achieve its target.

Table 3

**Summary of information on mitigation actions and their impacts reported by Spain**

<i>Sector affected</i>	<i>List of key mitigation actions</i>	<i>Estimate of mitigation impact by 2020 (kt CO<sub>2</sub> eq)</i>
Policy framework and cross-sectoral measures	EU Emissions Trading System (2013–2020)	NE
	2020 Diffuse Sectors Road Map	NE
	Clima project	663
Energy:		
Transport	PITVI programme	IE <sup>a</sup>
	EU regulations 333/2014 and 253/2014 on emission reductions for light-duty vehicles	2 275
Renewable energy	PER: Renewable Energy Action Plan 2011–2020	NE
Energy efficiency	Energy Efficiency Action Plan 2014	NE
CO <sub>2</sub> capture and storage	CIUDEN Research and Development Centre	NE
IPPU	EU regulation 517/2014 on fluorinated gases	2 756
Agriculture	Rural Development Programme – Autonomous Communities 2014–2020	NE
Waste	National Integrated Waste Management Plan (in development)	NE

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

*Abbreviations:* EU = European Union, IE = included elsewhere, IPPU = industrial processes and product use, NE = not estimated.

<sup>a</sup> In CTF table 3, Spain included two measures within the PITVI programme: (1) the modal shift for freight transportation from roads to railways; and (2) the modal shift towards non-motorized public transport. However,

other measures mentioned as “relevant” in the BR2 (page 21) (e.g. the modal shift from aircraft to high-speed trains) were not included in CTF table 3.

36. In its BR2, Spain explained that it is working on updating its Climate Change and Clean Energy Strategy. The first step taken towards updating this strategy is the approval of the 2020 Diffuse Sectors Road Map,<sup>6</sup> a document that analyses actions and their mitigation impacts related to activities under the ESD. The 2020 Diffuse Sectors Road Map explains that the updated strategy will be based on the identification of sectoral measures and on the development of the M3E model that performs a joint assessment of such measures and their effects. In its BR2, Spain indicated that it is working on a system to periodically assess and monitor the implementation of mitigation actions and their impacts, and the extent to which mitigation actions achieve the stated objectives in a given year, and to identify the possible need for additional actions. The BR2 also explains that by using the M3E model, the Party is able to identify the social and economic impacts of implemented measures (see para. 27 above). The ERT commends Spain for these actions and suggests that the Party include a description of the assumptions and methodologies used in the model for the identification of the impacts, in its next BR.

## **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**

37. Spain reported in its BR2 and CTF tables 4, 4(a) I, 4(a) II and 4(b) total emissions excluding LULUCF and including domestic and international aviation. This information was provided for the base year and for each reported year, such as for the years 2010–2013. Spain did not include in CTF table 4 any values related to the information requested in the UNFCCC reporting guidelines on BRs on the contribution from LULUCF and units from market-based mechanisms under the Convention and other mechanisms. However, in its BR2, Spain reported that it does not plan to use market-based mechanisms and that it plans to fulfil its commitments by 2020 by only implementing domestic measures. In its BR2, Spain explained that credits from market-based mechanisms have been used by operators under the EU ETS to comply with their individual targets, and that most of the operators have used the quota available until 2020. At the national level, Spain does not plan to use market-based mechanisms for the achievement of the national target under the ESD. The Party did not report on the LULUCF sector as that sector is not included under the Convention target. Further relevant information on emissions and removals and the use of units is provided in section 4.4 of the BR2.

38. In order to increase transparency, the ERT recommends that Spain fill in all relevant parts of CTF table 4 in accordance with the assumptions related to the target. This can be done, for example, by using the notation key “NA” (not applicable) if the requested information is not applicable, such as for the LULUCF sector and with regard to the use of units from market-based mechanisms, and by providing relevant explanations as needed in the footnote to the CTF table.

39. For 2013, Spain reported in CTF table 4 annual total GHG emissions excluding LULUCF and including domestic and international aviation of 335,313.00 kt CO<sub>2</sub> eq, or

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<sup>6</sup> Ministry of Agriculture, Food and the Environment. 2020 Diffuse Sectors Road Map (*Hoja de Ruta de los Sectores Difusos a 2020*). Available at <[http://www.magrama.gob.es/es/cambio-climatico/planes-y-estrategias/Hoja\\_de\\_Ruta\\_2020\\_tcm7-351528.pdf](http://www.magrama.gob.es/es/cambio-climatico/planes-y-estrategias/Hoja_de_Ruta_2020_tcm7-351528.pdf)>.

13.1 per cent above the 1990 level. In 2013, emissions from the non-ETS sectors relating to the target under the ESD were 196.54 Mt CO<sub>2</sub> eq.<sup>7</sup>

40. Table 4 below illustrates Spain’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 Spain towards the achievement of its target**

<i>Year</i>	<i>Emissions excluding LULUCF (kt CO<sub>2</sub> eq)<sup>a</sup></i>	<i>Contribution from LULUCF (kt CO<sub>2</sub> eq)</i>	<i>Emissions including contribution from LULUCF (kt CO<sub>2</sub> eq)</i>	<i>Use of units from market-based mechanisms (kt CO<sub>2</sub> eq)<sup>b</sup></i>
1990	296 364.90	NA	NA	NA
2010	369 639.80	NA	NA	NA
2011	369 347.80	NA	NA	NA
2012	362 356.40	NA	NA	NA
2013	335 313.00	NA	NA	NA

*Sources:* Spain’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.

<sup>a</sup> Emissions excluding LULUCF and including domestic and international aviation.

<sup>b</sup> Spain reported that since 2013 it is no longer possible to track the use of Kyoto Protocol mechanisms in the European Union Emissions Trading System directly via information on the public website of the European Union (EU) transaction log because certified emission reductions and emission reduction units are no longer surrendered directly but are exchanged into EU emission allowances. These exchanges will become public at the installation level after three years, with the first information, reflecting the use of mechanisms in 2013, available in 2016.

41. To assess the progress towards the achievement of the 2020 target, the ERT noted that Spain’s emission reduction target for sectors not covered by the EU ETS under the ESD is 10 per cent below the 2005 level (see para. 18 above). In 2013, Spain’s emissions from the sectors not covered by the EU ETS are 13.6 per cent<sup>8</sup> below the AEAs under the ESD.

42. The ERT noted that Spain is making progress towards its emission reduction target by implementing and planning mitigation actions that are delivering significant emission reductions.

**3. Projections**

43. Spain 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 used in the chapter on mitigation actions, and on a gas-by-gas basis for the following GHGs: CO<sub>2</sub>,

<sup>7</sup> 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>>.

<sup>8</sup> 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>>.

CH<sub>4</sub>, N<sub>2</sub>O, PFCs, HFCs and SF<sub>6</sub> (treating PFCs and HFCs collectively in each case). 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. Spain reported on factors and activities influencing emissions for each sector. Further information on the projections is provided in chapter 5 of the BR2.

44. In its BR2, Spain did not include information on whether the emission projections totals included fuel sold to ships and aircraft engaged in international transport. Further, emissions from these categories were not reported separately in the BR2. The BR2 provides a general reference to the Spanish submission<sup>9</sup> of projection data reported to the European Commission under the reporting requirements related to the EU monitoring mechanism regulation where these emission projections are reported separately. During the review, Spain clarified that this reference includes separate projections for both fuel sold to ships engaged in international transport and aircraft engaged in international transport but that the emission projections reported in the BR2 refer only to national emissions in accordance with the emissions provided in the national inventory and therefore do not include international marine or aircraft emissions.

45. The ERT recommends that Spain improve the completeness of its reporting in its next BR by clearly stating whether emissions from fuel sold to ships and aircraft engaged in international transport have been included in the totals and, to the extent possible, report these emissions separately and not include them in the totals.

46. In addition to the WEM scenario, Spain reported in its BR2 and CTF table 6(c) the ‘with additional measures’ (WAM) scenario. The projections are presented by sector in the same way as for the WEM scenario for the years 1990–2030, but are not presented by gas. During the review, Spain clarified that this was because the projections for the WAM scenario by gas have not yet been prepared beyond 2020 as a new methodology to estimate emission projections has recently been developed and that the estimation of projections for the WAM scenario disaggregated by gas for the years up to 2030 is planned for the future. The ERT encourages Spain to report projections for the WAM scenario disaggregated by gas in its next BR.

47. Spain did not report in its BR2 information on a ‘without measures’ (WOM) scenario, as required by the UNFCCC reporting guidelines on BRs. The ERT therefore encourages Spain to provide emission trend projections for the WOM scenario in addition to the WEM scenario in its next BR.

48. Spain did not report in its BR2 projections for indirect GHGs. The ERT encourages Spain to provide projections of the indirect GHGs such as carbon monoxide, nitrogen oxides and non-methane volatile organic compounds, as well as sulphur oxides, in its next BR.

49. In its BR2, Spain reported that a new approach for estimating projections has been developed compared with that used for the BR1. However, Spain did not report on the differences related to the assumptions, methodologies and models between the new approach and the approach used in its BR1. During the review, Spain provided additional information on the differences as well as a justification for the introduction of the new approach. The main reason for the change was that the approach previously used was not able to represent the impacts of the economic crisis in Spain. Furthermore, the contract with the external service provider who had previously prepared the projections has expired and

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<sup>9</sup> European Environment Agency. 2015. “2015 Spanish official submission on projections according to MMR Article 14”. Available at <[http://cdr.eionet.europa.eu/es/eu/mmr/art04-13-14\\_lcds\\_pams\\_projections/envvtt17a](http://cdr.eionet.europa.eu/es/eu/mmr/art04-13-14_lcds_pams_projections/envvtt17a)>.

the Ministry of Agriculture, Food and the Environment would not have been able to calculate the projections by itself. In cases where changes to the assumptions and methods used for the projections occur, the ERT encourages Spain to transparently report on the main differences, including any differences in the results, between the projections in its next BR.

50. Spain did not provide information on the sensitivity analysis in its BR2. During the review, Spain clarified that a sensitivity analysis has not yet been carried out and that its introduction is being considered for the future. The ERT encourages Spain to report on the sensitivity analysis for its projections in its next BR.

51. In CTF table 6(a), Spain indicates that LULUCF continues to remain a sink in 2020 and 2030. However, the CO<sub>2</sub> emissions including LULUCF presented in CTF table 6(a) for 2020 and 2030 are higher than the CO<sub>2</sub> emissions excluding LULUCF. The ERT considers that the values for CO<sub>2</sub> emissions including LULUCF for 2020 and 2030 have been erroneously entered into the cells for CO<sub>2</sub> emissions excluding LULUCF and vice versa. The same applies for the total emissions with and without LULUCF. The ERT suggests that Spain perform strict quality checks on future submissions of its BR and CTF tables.

52. In CTF table 5, Spain reported both historical and projected data only for population and GDP growth rate. The ERT encourages Spain to also provide, in CTF table 5, historical data for the other key variables and assumptions used for the projections analysis.

53. In its BR2, Spain presented quantitative information related to the WEM and WAM scenarios on total emissions and by sector, but not related to the scope of the ESD. Such information is provided in the report on projections submitted to the European Commission under the EU monitoring mechanism regulation to which the BR2 refers. Furthermore, in chapter 5 of its BR2, Spain discusses the developments under the WEM and WAM scenarios in a qualitative manner. The ERT noted that the Party's reporting could be enhanced by presenting projection data related to the scope of the ESD under the WEM and WAM scenarios in the BR and by analysing the scenarios presented by combining qualitative and quantitative information, for example by stating the changes in emission levels for the most relevant sectors and/or gases compared to the base year.

#### Overview of projection scenarios

54. The WEM scenario reported by Spain includes implemented and adopted PaMs up to 2013. Spain also reported on a WAM scenario, which includes planned PaMs. Spain provided a definition of its scenarios, explaining that its WEM scenario includes policies that have already been implemented, while its WAM scenario includes planned policies. The definitions indicate that the scenarios have 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

55. The methodology used in the BR2 is different from that used for the preparation of the emission projections for the NC6/BR1. The methodology is based on using selected activity variables developed using regression approaches on historical data combined with implied emission factors (both taken from national GHG inventory data). At present, 51 activity variables are used, which are consistent with the IPCC categories. Spain reported on these variables and related assumptions in its BR2. The activity variables are projected using a framework scenario with population and GDP development as drivers. Population and GDP development are reported in the BR2. Sectoral planning in the energy and transport sector was taken into consideration in developing the framework scenario. The WAM scenario is developed by considering the impacts of mitigation actions on activity

indicators and implied emission factors. In its BR2, Spain indicated that future refinements to the methodology are planned, including disaggregating the activity variables for road transport into subcategories.

### Results of projections

56. Spain's total GHG emissions excluding LULUCF in 2020 and 2030 are projected to be 352,724.00 and 389,448.00 kt CO<sub>2</sub> eq, respectively, under the WEM scenario, which represents an increase of 21.3 and 34.0 per cent, respectively, above the 1990 level. Under the WAM scenario, emissions in 2020 and 2030 are projected to be higher than those in 1990 by 18.5 and 31.2 per cent and amount to around 344,590.00 and 381,312.00 kt CO<sub>2</sub> eq, respectively. The 2020 projections suggest that while Spain will continue contributing to the achievement of the EU target under the Convention, emissions in 2020 and 2030 are expected to be well above the 1990 level (see para. 15 above).

57. Spain's target for the emissions from sectors covered by the ESD (non-ETS sectors) is to reduce its total emissions by 10 per cent below the 2005 level by 2020 (see para. 18 above). Spain's AEAs, which correspond to its national emission target for non-ETS sectors, change linearly from 220,902.86 kt CO<sub>2</sub> eq in 2013 to 208,588.21 kt CO<sub>2</sub> eq in 2020. According to the projections under the WEM scenario, emissions from non-ETS sectors are estimated to reach 208,372.69 kt CO<sub>2</sub> eq<sup>10</sup> by 2020. Under the WAM scenario, Spain's emissions from non-ETS sectors in 2020 are projected to be 199,316.67 kt CO<sub>2</sub> eq. The projected level of emissions under the WEM and WAM scenarios is 0.1 and 4.4 per cent, respectively, below the AEAs allocated for 2020. The ERT noted that this suggests that Spain expects to meet the target under both the WEM and WAM scenarios.

58. According to the projections reported for 2020 under the WEM scenario, the most significant emission increases are expected to occur in the transport and energy sectors, amounting to projected increases of 28,592.00 kt CO<sub>2</sub> eq (48.3 per cent) and 27,729.00 kt CO<sub>2</sub> eq (18.1 per cent), between 1990 and 2020, respectively. The pattern of projected emissions reported for 2030 under the same scenario remains the same. The increase in emissions is mainly driven by the expected economic growth and related increase in the activity levels.

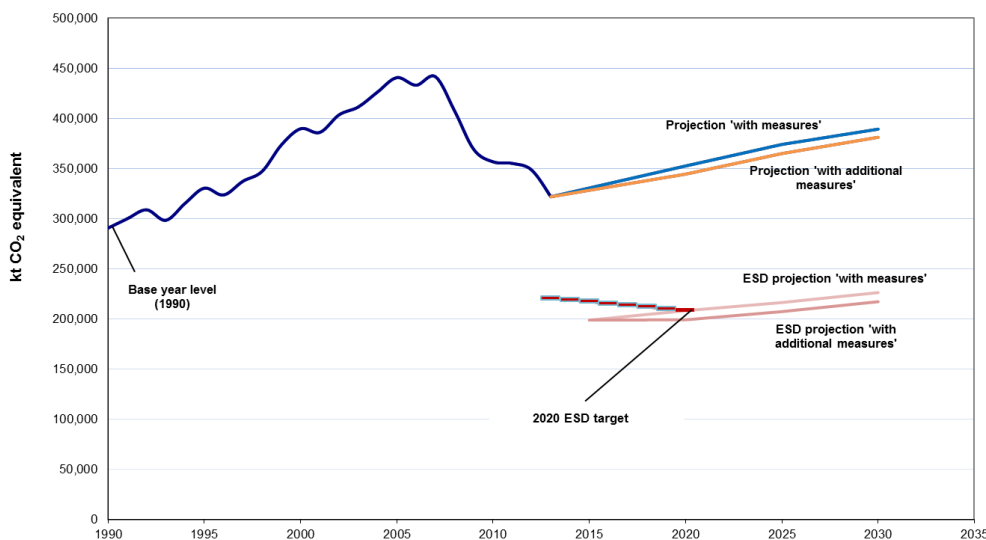
59. In 2020, under the WEM scenario, the most significant reductions are projected for N<sub>2</sub>O (excluding LULUCF) and PFC emissions: 678.00 kt CO<sub>2</sub> eq (2.8 per cent) and 590.00 kt CO<sub>2</sub> eq (57.8 per cent) between 1990 and 2020, respectively. CO<sub>2</sub> emissions excluding LULUCF are projected to increase by 72,177.00 kt CO<sub>2</sub> eq (35.0 per cent) and HFC emissions by 9,261.00 kt CO<sub>2</sub> eq (300.5 per cent) over the same period.

60. The pattern of emission reductions by 2020 presented by sector under the WAM scenario changes slightly, mainly owing to reductions that are expected to be delivered by the additional actions planned within the scope of the ESD, as included in the 2020 Diffuse Sectors Road Map.

61. The projected emission levels under the different scenarios and Spain's quantified economy-wide emission reduction target are presented in the figure below.

<sup>10</sup> European Environment Agency. 2015. "2015 Spanish official submission on projections according to MMR Article 14". Available at <[http://cdr.eionet.europa.eu/es/eu/mmr/art04-13-14\\_lcds\\_pams\\_projections/envvtt17a](http://cdr.eionet.europa.eu/es/eu/mmr/art04-13-14_lcds_pams_projections/envvtt17a)>.

### Greenhouse gas emission projections by Spain



Sources: (1) Data for the years 1990–2013: Spain’s 2015 annual inventory submission, version 1.0; (2) Data for the years 2013–2030: Spain’s second biennial report; total GHG emissions excluding land use, land-use change and forestry.

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

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

62. In its BR2, Spain 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 the provision of support, delivery mechanisms used and allocation channels tracked. Spain reported a description of the methodology used to report financial support, including underlying assumptions. Further information on the Party’s provision of support to developing country Parties is provided in chapter 6 of the BR2.

63. In its BR2 Spain reported that contributions are “new and additional” when support is provided to activities that are new and specific to climate change; however, no clarification was provided on how the activities are new and specific to climate change.

64. During the review, Spain clarified that the concept of “new and additional” should be a dynamic and flexible concept and that it considers its multilateral and bilateral contributions as new and specific to climate change because these focus on supporting specific and/or new climate change funds or programmes within multilateral organizations or bilateral programmes. Spain further explained that it is very difficult to identify the exact number of climate change activities that are new and specific due to their cross-cutting nature.

65. The ERT reiterates the recommendation from the BR1 that Spain improve the transparency of its reporting in its next BR by reporting detailed information, including a definition of how activities are new and specific to climate change, in the context of the definition of “new and additional”.



66. Although Spain reported in its BR2 information on delivery mechanisms used and allocation channels tracked, it did not include the information required by the UNFCCC reporting guidelines on BRs on indicators used for tracking the provision of financial, technological or capacity-building support to non-Annex I Parties.

67. Spain explained in its BR2 that it uses the Rio Markers to report to the Development Assistance Committee of the Organisation for Economic Co-operation and Development on its official development assistance (ODA). In its BR2, Spain also included a short description of its approach to tracking climate support provided to non-Annex I Parties, explaining that the Spanish Climate Change Office contacts all stakeholders involved in order to quantify the financial resources provided and compiles the information related to the corresponding actions. During the review, Spain further explained that the information presented in its BR2 is a compilation of information collected from various stakeholders and that the stakeholders were not required to submit information on the indicators used to track their provision of technological and capacity-building support to non-Annex I Parties.

68. The ERT recommends that Spain improve the completeness of its reporting in its next BR by including the information on indicators used for tracking the provision of financial, technological or capacity-building support to non-Annex I Parties or by including explanations for the reasons why such information is not reported.

69. Spain reported the financial support it provided to non-Annex I Parties, distinguishing between support for mitigation and adaptation activities and recognizing the capacity-building elements of such support.

## **1. Finance**

70. In its BR2 and CTF tables 7, 7(a) and 7(b), Spain reported information on the provision of financial support required under the Convention, including on financial support provided and committed, allocation channels and annual contributions. The summary information was reported for 2013–2014.

71. Spain described how its resources address the adaptation and mitigation needs of non-Annex I Parties. Spain also described how those resources assist non-Annex I Parties to mitigate and adapt to the adverse effects of climate change, and contribute to technology development and transfer and capacity-building related to mitigation and adaptation “(see chapters II.D.2 and II.D.3 below). In relation to addressing the adaptation and mitigation needs of countries, Spain has established specific procedures to take into account the needs of countries and their development priorities. Based on the identified priorities and needs, Spain channels its resources through a number of public entities and leverages funds for private entities that work closely with agencies in non-Annex I Parties.

72. Spain provided information on the types of instruments used in the provision of its assistance (see para. 79 below). In addition, Spain 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).

73. With regard to the most recent financial contributions aimed at enhancing the implementation of the Convention by developing countries, Spain has continued its support for adaptation and mitigation activities in developing countries by mainstreaming climate objectives through its ODA and its other official flows. Spain reported that its bilateral ODA focuses on the specific needs and development priorities of each country. Out of the 62 countries to which Spain provides bilateral support, 21 are located in South America, 25 in Africa (including most of the group of the least developed countries), 14 in Asia and 1 in Eastern Europe.

74. Spain reported on its climate-specific public financial support provided in 2013 and 2014, totalling USD 337.96 million in 2013 and USD 576.63 million in 2014. In relation to provided and committed funds, Spain reported all contributions through multilateral channels in 2013 and 2014 as “provided”. Spain further reported 66.5 and 79.8 per cent of funds for climate-specific contributions through bilateral, regional and other channels for 2013 and 2014, respectively, as “committed”. It should be noted that Spain indicated in its BR2 that “committed” contributions refer to cases of operations related to insurance of export credits. In response to a question raised by the ERT during the review for further clarification, Spain indicated that there are also other committed contributions for specific climate purposes, but that “committed” contributions are considered in the case of export credits only because of the specific nature of the financial instrument. During the reporting period, Spain placed a particular focus on Latin American and the Caribbean, and Africa, providing most of its resources to those two regions.

75. The BR2 includes detailed information on the financial support provided through multilateral channels, and bilateral and regional channels in 2013 and 2014. More specifically, Spain contributed through multilateral channels, as reported in its BR2 and in CTF table 7(a), USD 0.66 million and 52.78 million for 2013 and 2014, respectively. These contributions were made to specialized multilateral climate change funds, such as the Global Environment Facility, the Adaptation Fund, the United Nations Environment Programme (UNEP), the United Nations Office for Disaster Risk Reduction and the United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries. The BR2 and CTF table 7(b) also include detailed information on the total financial support provided through bilateral and regional channels in the amounts of USD 337.30 million and 523.85 million in 2013 and 2014, respectively. Spain presented this information based on individual countries and regional groups, for example Latin America and the Caribbean, and sub-Saharan Africa. Table 5 includes some of the information reported by Spain on its provision of financial support.

Table 5

**Summary of information on provision of financial support in 2013–2014 by Spain**

(Millions of United States dollars)

<i>Allocation channel of public financial support</i>	<i>Years of disbursement</i>	
	<i>2013</i>	<i>2014</i>
Official development assistance <sup>a</sup>	2 281.13	2 295.44
Climate-specific contributions through multilateral channels, including:	0.66	52.78
Global Environment Facility		11.76
Adaptation Fund		0.22
United Nations bodies	0.66	0.99
Other (Clean Technology Fund)		39.8
Climate-specific contributions through bilateral, regional and other channels	337.3	523.85

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

76. 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 77.4, 14.3 and 8.3 per cent, respectively. Altogether, 0.2 per cent of the total public financial support was allocated through multilateral channels

and 99.8 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 90.6, 4.3 and 5.1 per cent, respectively. In total, 8.4 per cent of the total public financial support was allocated through multilateral channels and 91.6 per cent of it was through bilateral, regional and other channels.

77. The ERT noted that, in 2013, 80 per cent of financial contributions made through multilateral channels were allocated to multisectoral activities and the remaining 20 per cent to disaster risk reduction, as reported in CTF table 7(a). The ERT noted that Spain did not report the corresponding figures for 2014 in CTF table 7(a).

78. With respect to bilateral support, Spain reported on climate-specific public financial support provided in 2013 and 2014. In 2013, 77.5 per cent of resources were allocated to mitigation activities, with activities in the energy sector comprising 98.3 per cent. Adaptation represented 14.3 per cent of resources, with 63.3 per cent allocated to water and sanitation, 5.5 per cent to agriculture and 28.8 per cent classified as “other”. In 2014, 92.2 per cent of resources were allocated to mitigation activities, with activities in the energy sector comprising 99.1 per cent. Adaptation represented 4.7 per cent, with 33.9 per cent allocated to water and sanitation, 23.3 per cent to agriculture and 34.2 per cent classified as “other”.

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, loans and guarantees. The ERT noted that most of the resources provided through bilateral, regional and other channels in 2013 were through non-concessional loans, amounting to 69.2 per cent, while grants amounted to 18.8 per cent, concessional loans to 8.8 per cent and equity funds to 3.2 per cent. The ERT noted that most of the resources provided in 2014 were classified as “other (export credit pure cover)”, amounting to 79.8 per cent, while grants amounted to 8.2 per cent, concessional loans to 5.7 per cent, non-concessional loans to 5.9 per cent and 0.4 per cent classified as “other (shares’ acquisition)”.

80. In its BR2, Spain explained that private finance is mainly related to exports of goods, technologies and services in the sectors related to waste treatment, water and sanitation, and other multisectoral activities. Spain also reported on how it promotes the provision of financial support to developing countries from the private sector through public funds, which it views as pivotal to effectively increasing both mitigation and adaptation efforts in developing countries.

81. Spain explained its approach to reporting on private financial flows leveraged by bilateral climate finance for mitigation and adaptation activities in non-Annex I Parties. The main avenues for this financing are the Corporate Internationalization Fund (FIEM), the Spanish Credit Export Agency (CESCE), the Spanish Development Financing Company (COFIDES) and the Spanish Green Growth Group (GECV). FIEM provides direct financing for international contracts for the supply of goods, the provision of services or the execution of projects agreed by Spanish companies and in support of direct investment abroad. CESCE is a credit insurance company, which provides indemnity to financial institutions in the event that importers do not meet their payment obligations as stated in credit agreements. COFIDES is a jointly owned State and private company, which contributes to investment projects relating to climate change adaptation and mitigation. GECV comprises around 30 Spanish companies promoting a low-emission economy.

## **2. Technology development and transfer**

82. In its BR2 and CTF table 8, Spain 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. Spain

provided examples of support provided for the deployment and enhancement of the endogenous capacities and technologies of non-Annex I Parties (see paras. 84 and 85 below).

83. Similarly to its BR1, in its BR2, Spain did not include information on success and failure stories related to technology development and transfer. The ERT encourages Spain to provide this information in its next BR.

84. The ERT noted that, in its BR2, including CTF table 8, Spain reported on its PaMs in relation to technology transfer, and in particular on measures taken to promote, facilitate and finance the transfer and deployment of climate-friendly technologies. In its BR2, Spain provided information on measures taken to support the development and enhancement of the endogenous capacities and technologies of non-Annex I Parties. An example of this is the Regional Gateway for Technology Transfer and Climate Change Action in Latin America and the Caribbean (REGATTA) project, implemented in 2013 by UNEP and supported mainly by Spain, with the objective of strengthening the capacity and knowledge-sharing of climate change technologies and experiences for adaptation and mitigation in Latin America and the Caribbean.<sup>11</sup> Another example is the Economic Community of West African States (ECOWAS) Regional Centre for Renewable Energy and Energy Efficiency, established in 2013 to promote renewable energy and energy efficiency technologies and projects in the West African States.

85. The ERT took note of the information provided in CTF table 8 on recipient countries, target areas, measures and focus sectors of technology transfer programmes. The information presented was mostly related to the public sector, with a few examples of public and private partnerships through instruments such as the instrument for technological cooperation between companies in Ibero-America (IBEROEKA), which supports technological business cooperation.

### **3. Capacity-building**

86. In its BR2 and CTF table 9, Spain supplied information on how it provided capacity-building support for mitigation, adaptation and technology that responds to the existing and emerging needs identified by non-Annex I Parties. The ERT notes that Spain improved the information on capacity-building in its BR2 compared with the information presented in its BR1 and commends the Party for this.

87. Spain described individual measures and activities related to capacity-building support in textual and tabular format.

88. Spain reported that it supported climate-related capacity development activities relating to adaptation, mitigation and technology development and transfer. Spain also reported that it 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.

89. The BR2 and CTF table 9 include information describing a number of individual capacity-building measures and activities carried out during the reporting period. Examples include: support for regional workshops in Latin America and the Caribbean on local adaptation; training in the development of nationally appropriate mitigation actions (NAMAs) in relation to renewable energy; and the organization of workshops on a regional strategy for efficient lighting in Central America.

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<sup>11</sup> See <<http://www.cambioclimatico-regatta.org/index.php/es/>>.

### III. Conclusions

90. The ERT conducted a technical review of the information reported in the BR2 and CTF tables of Spain 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 Spain in achieving its target; and the Party's provision of support to developing country Parties.

91. Spain's total GHG emissions excluding LULUCF related to its quantified economy-wide emission reduction target were estimated to be 15.0 per cent above its 1990 level, whereas total GHG emissions including LULUCF are 14.1 per cent above its 1990 level for 2014. The emission increase was driven by the increase in energy consumption (including fuels for transportation), the amount of solid waste deposited and the use of HFCs for refrigeration and air conditioning.

92. Under the Convention, Spain 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 all sectors and the gases CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs and SF<sub>6</sub>, 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.

93. Under the ESD, Spain has a target to reduce its emissions by 10 per cent below the 2005 level by 2020. Spain's AEAs, which correspond to its national emission target for non-ETS sectors, change linearly from 220,902.86 kt CO<sub>2</sub> eq in 2013 to 208,588.21 kt CO<sub>2</sub> eq in 2020.

94. Spain's main policy framework relating to energy and climate change is the EU 2020 climate and energy package adopted in 2009, which includes the revised EU ETS and the ESD. Key legislation supporting Spain's climate change goals includes renewable energy and energy efficiency legislation and legislative proposals on the 2020 targets for CO<sub>2</sub> emissions from cars and vans, the carbon capture and storage directive, and the general programmes for environmental conservation, namely the 7<sup>th</sup> Environment Action Programme and the Clean Air Policy Package. The mitigation actions with the most significant mitigation impact are the introduction of a tax for the use of F-gases, the promotion of modal changes in the transportation sector and the inclusion of subsidies and rules to improve energy efficiency in buildings.

95. For 2013, Spain reported in CTF table 4 annual total GHG emissions excluding LULUCF and including domestic and international aviation of 335,313.00 kt CO<sub>2</sub> eq. Spain reported that it does not plan to use market-based mechanisms for the achievement of the national target under the ESD.

96. The GHG emission projections provided by Spain in its BR2 include those for the WEM and WAM scenarios. Under these two scenarios, emissions are projected to be 21.3 and 18.5 per cent above the 1990 level in 2020, respectively. For the non-ETS sectors, the estimated emissions in 2020 are projected to reach 208,372.69 kt CO<sub>2</sub> eq under the WEM scenario, and 199,316.67 kt CO<sub>2</sub> eq under the WAM scenario. On the basis of the reported information, the ERT concluded that Spain expects to meet its 2020 target for non-ETS sectors under both the WEM and the WAM scenarios.

97. Spain continues to allocate climate financing in line with the climate finance programmes such as the Bringing Europe and Third Countries Closer Together through Renewable Energies (BETTER) programme, the IBEROEKA programme, which supports business technological cooperation in Latin America, and the EUREKA programme, which focuses on low-carbon energy technologies. Spain reported on its climate-specific public financial support provided in 2013 and 2014, totalling USD 337.96 million and 576.63 million, respectively. For these years, Spain's support provided for mitigation actions was higher than the support provided for adaptation. The highest level of financial support went to projects in the energy sector. Spain reported that it responded to emerging climate-related capacity development needs relating to adaptation (e.g. workshops on adaptation in Latin America and the Caribbean), mitigation (e.g. workshops on NAMAs in relation to renewable energy) and technology development and transfer. Spain reported on its PaMs in relation to technology transfer, and in particular on measures taken to promote, facilitate and finance the transfer and deployment of climate-friendly technologies, such as the REGATTA project and the ECOWAS Regional Centre for Renewable Energy and Energy Efficiency.

98. In the course of the review, the ERT formulated the following recommendations for Spain to improve its adherence to the UNFCCC reporting guidelines on BRs in its next BR:<sup>12</sup>

- (a) Improve the completeness of its reporting by:
  - (i) Reporting the estimated mitigation impacts of its PaMs in CTF table 3, or by including explanations for the reasons why such information is not reported (see para. 25 above);
  - (ii) Clearly stating in its next BR whether emissions from fuel sold to ships and aircraft engaged in international transport have been included in the totals and, to the extent possible, reporting these emissions separately and not including them in the totals (see para. 45 above);
  - (iii) Including the information on indicators used for tracking the provision of financial, technological or capacity-building support to non-Annex I Parties (see para. 68 above);
- (b) Improve the transparency of its reporting by:
  - (i) Filling in all relevant parts of CTF table 4 in accordance with the assumptions related to the target (see para. 38 above);
  - (ii) Reporting detailed information, including a definition of how activities are new and specific to climate change, in the context of the definition of "new and additional" (see para. 65 above).

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<sup>12</sup> The recommendations are given in full in the relevant chapters of this report.

## Annex

### Documents and information used during the review

#### A. Reference documents

“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#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 I 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/ESP. Report on the individual review of the annual submission of Spain submitted in 2014. Available at <<http://unfccc.int/resource/docs/2015/arr/esp.pdf>>.

FCCC/IDR.6/ESP. Report of the technical review of the sixth national communication of Spain. Available at <<http://unfccc.int/resource/docs/2014/idr/esp06.pdf>>.

FCCC/TRR.1/ESP. Report of the technical review of the first biennial report of Spain. Available at <<http://unfccc.int/resource/docs/2014/trr/esp01.pdf>>.

2016 greenhouse gas inventory submission of Spain. Available at  
<[http://unfccc.int/national\\_reports/annex\\_i\\_ghg\\_inventories/national\\_inventories\\_submissions/items/9492.php](http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/9492.php)>.

Sixth national communication of Spain. Available at  
<[http://unfccc.int/national\\_reports/annex\\_i\\_natcom/submitted\\_natcom/items/7742.php](http://unfccc.int/national_reports/annex_i_natcom/submitted_natcom/items/7742.php)>.

First biennial report of Spain. Available at  
<[http://unfccc.int/files/national\\_reports/biennial\\_reports\\_and\\_iar/submitted\\_biennial\\_reports/application/pdf/131219\\_primer\\_informe\\_bienal\\_de\\_espana.pdf](http://unfccc.int/files/national_reports/biennial_reports_and_iar/submitted_biennial_reports/application/pdf/131219_primer_informe_bienal_de_espana.pdf)>.

Common tabular format tables of the first biennial report of Spain. Available at  
<[http://unfccc.int/files/national\\_reports/biennial\\_reports\\_and\\_iar/submitted\\_biennial\\_reports/application/pdf/esp\\_2014\\_v1.0.pdf](http://unfccc.int/files/national_reports/biennial_reports_and_iar/submitted_biennial_reports/application/pdf/esp_2014_v1.0.pdf)>.

Second biennial report of Spain. Available at  
<[http://unfccc.int/files/national\\_reports/biennial\\_reports\\_and\\_iar/submitted\\_biennial\\_reports/application/pdf/segundo\\_informe\\_bienal\\_de\\_espana\\_a\\_la\\_unfccc\\_final.pdf](http://unfccc.int/files/national_reports/biennial_reports_and_iar/submitted_biennial_reports/application/pdf/segundo_informe_bienal_de_espana_a_la_unfccc_final.pdf)>.

Common tabular format tables of the second biennial report of Spain. Available at  
<[http://unfccc.int/files/national\\_reports/biennial\\_reports\\_and\\_iar/submitted\\_biennial\\_reports/application/pdf/esp\\_2016\\_v1.0\\_formatted2.pdf](http://unfccc.int/files/national_reports/biennial_reports_and_iar/submitted_biennial_reports/application/pdf/esp_2016_v1.0_formatted2.pdf)>.

**B. Additional information used during the review**

Responses to questions during the review were received from Ms. Sara Aagesen Muñoz (Spanish Climate Change Office, Ministry of Agriculture, Food and the Environment).

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