



United Nations

FCCC/TRR.3/ESP



Framework Convention on  
Climate Change

Distr.: General  
29 November 2018

English only

---


## **Report on the technical review of the third biennial report of Spain**

Developed country Parties were requested by decision 2/CP.17 to submit their third biennial report to the secretariat by 1 January 2018. This report presents the results of the technical review of the third 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”.

GE.18-20557(E)



\* 1 8 2 0 5 5 7 \*

Please recycle 



## Contents

	<i>Paragraphs</i>	<i>Page</i>
Abbreviations and acronyms .....		3
I. Introduction and summary .....	1–6	5
A. Introduction .....	1–3	5
B. Summary.....	4–6	5
II. Technical review of the information reported in the third biennial report .....	7–92	6
A. Information on greenhouse gas emissions and removals related to the quantified economy-wide emission reduction target .....	7–11	6
B. Assumptions, conditions and methodologies related to attainment of quantified economy-wide emission reduction target .....	12–16	7
C. Progress made towards the achievement of the quantified economy-wide emission reduction target .....	17–63	8
D. Provision of financial, technological and capacity-building support to developing country Parties.....	64–92	22
III. Conclusions and recommendations .....	93–102	28
Annex		
Documents and information used during the review .....		31

## Abbreviations and acronyms

AEA	annual emission allocation
AECID	Spanish Agency for International Development Cooperation
AR4	Fourth Assessment Report of the Intergovernmental Panel on Climate Change
BR	biennial report
CH <sub>4</sub>	methane
CO <sub>2</sub>	carbon dioxide
CO <sub>2</sub> eq	carbon dioxide equivalent
CTF	common tabular format
ERT	expert review team
ESD	effort-sharing decision
EU	European Union
EU ETS	European Union Emissions Trading System
F-gas	fluorinated gas
GDP	gross domestic product
GHG	greenhouse gas
HFC	hydrofluorocarbon
IPPU	industrial processes and product use
ktoe	kilotonne of oil equivalent
LULUCF	land use, land-use change and forestry
MAPAMA	Spanish Ministry of Agriculture and Fisheries, Food and Environment
Mtoe	megatonne of oil equivalent
NA	not applicable
NC	national communication
NE	not estimated
NF <sub>3</sub>	nitrogen trifluoride
NIR	national inventory report
NO	not occurring
non-Annex I Party	Party not included in Annex I to the Convention
non-ETS sectors	sectors not covered by the European Union Emissions Trading System
N <sub>2</sub> O	nitrous oxide
ODA	official development assistance
OOF	other official flows
PaMs	policies and measures
PFC	perfluorocarbon
PIMA	Spanish Plan to Drive Environmental Improvement
REGATTA	Regional Getaway for Technology Transfer and Climate Change Action in Latin America and the Caribbean
reporting guidelines for supplementary information	“Guidelines for the preparation of the information required under Article 7 of the Kyoto Protocol, Part II: Reporting of supplementary information under Article 7, paragraph 2”
RIOCC	Ibero-American Network of Climate Change Offices
SF <sub>6</sub>	sulfur hexafluoride
UNEP	United Nations Environment Programme
UNFCCC reporting guidelines on BRs	“UNFCCC biennial reporting guidelines for developed country Parties”

UNFCCC reporting guidelines on NCs	“Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications”
WAM	‘with additional measures’
WEM	‘with measures’
WOM	‘without measures’

## I. Introduction and summary

### A. Introduction

1. This is a report on the in-country technical review of the BR3<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).

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

3. The review was conducted from 28 May to 2 June 2018 in Madrid by the following team of nominated experts from the UNFCCC roster of experts: Mr. Carlos Benavides (Chile), Mr. Pierre Brender (France), Ms. Maria Gutiérrez (Mexico), Ms. Inês Sousa Mourão (Cabo Verde) and Mr. Daniel Perczyk (Argentina). Mr. Brender and Ms. Gutiérrez were the lead reviewers. The review was coordinated by Mr. Javier Hanna (UNFCCC secretariat).

### B. Summary

4. The ERT conducted a technical review of the information reported in the BR3 of Spain in accordance with the UNFCCC reporting guidelines on BRs (annex I to decision 2/CP.17).

#### 1. Timeliness

5. The BR3 was submitted on 22 December 2017, before the deadline of 1 January 2018 mandated by decision 2/CP.17. The CTF tables were also submitted on 22 December 2017.

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

6. Issues and gaps identified by the ERT related to the reported information are presented in table 1. The information reported by Spain in its BR3 mostly adheres to the UNFCCC reporting guidelines on BRs.

Table 1

**Summary of completeness and transparency of mandatory information reported by Spain in its third biennial report**

<i>Section of BR</i>	<i>Completeness</i>	<i>Transparency</i>	<i>Reference to description of recommendations</i>
GHG emissions and trends	Complete	Transparent	–
Assumptions, conditions and methodologies related to the attainment of the quantified economy-wide emission reduction target	Complete	Mostly transparent	Issue 1 in table 3
Progress in achievement of targets	Complete	Partially transparent	Issues 1, 2 and 3 in table 5, issues 1 and 2 in table 7, issue 3 in table 11
Provision of support to developing country Parties	Complete	Transparent	–

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

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

## II. Technical review of the information reported in the third biennial report

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

#### 1. Technical assessment of the reported information

7. According to the latest GHG inventory (version 1 of the 2018 annual submission of Spain), total GHG emissions<sup>2</sup> excluding emissions and removals from LULUCF increased by 12.9 per cent between 1990 and 2016, whereas total GHG emissions including net emissions or removals from LULUCF increased by 14.4 per cent over the same period. Table 2 illustrates the emission trends by sector and by gas for Spain for up to 2016 on the basis of its latest GHG inventory submission.

Table 2

Greenhouse gas emissions by sector and by gas for Spain for the period 1990–2016

	GHG emissions (kt CO <sub>2</sub> eq)					Change (%)		Share (%)	
	1990	2000	2010	2015	2016	1990–2016	2015–2016	1990	2016
<i>Sector</i>									
1. Energy	213 690.67	290 361.06	265 763.50	254 633.65	244 134.64	14.2	–4.1	74.3	75.2
A1. Energy industries	78 903.64	105 747.79	75 327.76	86 392.04	71 128.49	–9.9	–17.7	27.4	21.9
A2. Manufacturing industries and construction	45 098.62	58 663.14	49 765.31	40 462.33	40 865.37	–9.4	1.0	15.7	12.6
A3. Transport	59 198.62	86 730.28	91 154.24	83 197.46	86 130.73	45.5	3.5	20.6	26.5
A4. and A5. Other	26 652.36	35 822.78	46 325.62	40 126.52	41 507.94	55.7	3.4	9.3	12.8
B. Fugitive emissions from fuels	3 837.43	3 397.06	3 190.57	4 455.30	4 502.12	17.3	1.1	1.3	1.4
C. CO <sub>2</sub> transport and storage	NO	NO	NO	NO	NO	NA	NA	NA	NA
2. IPPU	29 981.27	42 712.01	41 626.16	32 268.13	31 815.51	6.1	–1.4	10.4	9.8
3. Agriculture	34 159.64	39 472.67	33 913.41	34 532.98	34 405.38	0.7	–0.4	11.9	10.6
4. LULUCF	–39 349.52	–42 970.68	–40 450.15	–42 007.07	–40 744.68	3.5	–3.0	NA	NA
5. Waste	9 824.80	13 026.44	14 579.24	14 374.70	14 351.02	46.1	–0.2	3.4	4.4
6. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA
<i>Gas<sup>a</sup></i>									
CO <sub>2</sub>	231 895.05	311 926.06	283 877.49	271 727.20	260 985.90	12.5	–4.0	80.6	80.4
CH <sub>4</sub>	34 038.89	40 142.18	37 912.04	37 159.54	37 259.82	9.5	0.3	11.8	11.5
N <sub>2</sub> O	17 454.53	20 278.62	16 803.50	16 750.84	16 425.57	–5.9	–1.9	6.1	5.1
HFCs	3 039.92	12 541.66	16 947.47	9 374.13	9 156.90	201.2	–2.3	1.1	2.8
PFCs	1 164.38	495.98	106.94	94.01	92.03	–92.1	–2.1	0.4	0.0
Unspecified mix of HFCs and PFCs	NA, NO	NA, NO	NA, NO	481.99	556.71	NA	15.5	NA	0.2
SF <sub>6</sub>	63.61	187.68	234.87	221.75	229.62	261.0	3.6	0.02	0.1
NF <sub>3</sub>	NA, NO	NA, NO	NO, NE, NA	NO, NA	NO, NA	NA	NA	NA	NA

<sup>2</sup> In this report, the term “total GHG emissions” refers to the aggregated national GHG emissions expressed in terms of CO<sub>2</sub> eq excluding LULUCF, unless otherwise specified. Values in this report are calculated based on the GHG inventory, version 7, of the Party’s 2017 annual submission, unless otherwise specified.

	<i>GHG emissions (kt CO<sub>2</sub> eq)</i>					<i>Change (%)</i>		<i>Share (%)</i>	
	<i>1990</i>	<i>2000</i>	<i>2010</i>	<i>2015</i>	<i>2016</i>	<i>1990– 2016</i>	<i>2015– 2016</i>	<i>1990</i>	<i>2016</i>
	<b>Total GHG emissions without LULUCF</b>	<b>287 656.37</b>	<b>385 572.18</b>	<b>355 882.31</b>	<b>335 809.46</b>	<b>324 706.55</b>	<b>12.9</b>	<b>–3.3</b>	<b>100.0</b>
<b>Total GHG emissions with LULUCF</b>	<b>248 306.85</b>	<b>342 601.50</b>	<b>315 432.16</b>	<b>293 802.39</b>	<b>283 961.88</b>	<b>14.4</b>	<b>–3.3</b>	<b>NA</b>	<b>NA</b>

Source: GHG emission data: Spain's 2018 annual submission, version 1.

<sup>a</sup> Emissions by gas without LULUCF and without indirect CO<sub>2</sub>.

8. On the basis of the Party's latest GHG inventory submission (2018), the ERT noted an increase in total emissions of 54.2 per cent over the period 1990–2007, which was driven mainly by strong economic and population growth. Some sectors experienced significant growth over that period: commercial/institutional consumption of energy increased by more than 145 per cent, emissions from transportation by more than 80 per cent and emissions from industrial processes by 67 per cent. The economic downturn and population stabilization that followed in the period 2008–2014, together with the mitigation PaMs implemented by Spain, contributed to a subsequent decrease in emissions.

9. The summary information provided on GHG emissions was consistent with the information reported in Spain's 2017 annual submission.

10. In brief, Spain's national inventory arrangements were established in accordance with the agreement of its Government Delegated Commission for Economic Affairs in February 2007. The Directorate-General for Environmental Assessment and Quality and Natural Environment of MAPAMA is the authority in charge of elaborating the inventory, for which it requests and processes data and information from other administration and public institutions. MAPAMA presents the draft of the inventory to the Government Delegated Commission for Economic Affairs for approval. The BR3 did not mention any changes that had occurred in these arrangements since the BR2, and Spain confirmed during the review that there had not been any.

## 2. Assessment of adherence to the reporting guidelines

11. The ERT assessed the information reported in the BR3 of Spain and recognized that the reporting is complete, transparent and adhering to the UNFCCC reporting guidelines on BRs. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

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

### 1. Technical assessment of the reported information

12. For Spain the Convention entered into force on 21 March 1994. Under the Convention Spain committed to contributing to the achievement of the joint EU economy-wide emission reduction target of 20 per cent below the 1990 level by 2020. The EU offered to move to a 30 per cent reduction target 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.

13. The target for the EU and its member States is formalized in the EU 2020 climate and energy package. The legislative package regulates emissions of CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs and SF<sub>6</sub> using global warming potential values from the AR4 to aggregate the GHG emissions of the EU until 2020. Emissions and removals from the LULUCF sector are not included in the quantified economy-wide emission reduction target under the Convention. The EU generally allows its member States to use units from the Kyoto Protocol mechanisms for compliance purposes, subject to a number of restrictions in terms of origin and type of project and up to an established limit. Companies can make use of such units to fulfil their requirements under the EU ETS.

14. The EU 2020 climate and energy package includes the EU ETS and the ESD (see chapter II.C.1(a) below). The EU ETS covers mainly point emissions sources in the energy, industry and aviation sectors. An EU-wide emissions cap has been put in place for the period 2013–2020 with the goal of reducing emissions by 21 per cent below the 2005 level by 2020 for emissions covered by the EU ETS. Emissions from non-ETS sectors are regulated through member State specific targets that add up to a reduction at the EU level of 10 per cent below the 2005 level by 2020.

15. Under the ESD, Spain has a target of reducing its total emissions to 10 per cent below the 2005 level by 2020 for non-ETS sectors. National emission targets for non-ETS sectors for 2020 have been translated into binding quantified AEAs for the period 2013–2020. Spain's AEAs change following a near linear path from 227,563.76 kt CO<sub>2</sub> eq in 2013 to 212,390.48 kt CO<sub>2</sub> eq in 2020.<sup>3,4</sup>

## 2. Assessment of adherence to the reporting guidelines

16. The ERT assessed the information reported in the BR3 of Spain and identified an issue relating to transparency and adherence to the UNFCCC reporting guidelines on BRs. The finding is described in table 3.

Table 3

### Findings on the quantified economy-wide emission reduction target from the review of the third biennial report of Spain

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation
1	Reporting requirement specified in paragraph 4  Issue type: transparency  Assessment: recommendation	The ERT noted that Spain's national emission targets for non-ETS sectors for 2020 have been translated into binding quantified AEAs for the period 2013–2020 in accordance with European Commission implementing decisions 2013/162/EU and 2013/634/EU, and that Spain reported this information in its BR3. The ERT, also noted, however, that the AEAs for the period 2017–2020 were updated in 2017.  During the review, Spain confirmed that the information presented in the BR3 regarding AEAs for the period 2013–2020 corresponds to the original ESD targets included in decisions 2013/162/EU and 2013/634/EU and does not reflect the updated 2017 values.  The ERT recommends that Spain provide in its next BR updated information on its AEAs, taking into account, as relevant, the latest related European Commission decisions, within the description of its quantified economy-wide emission reduction target.

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

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

### 1. Mitigation actions and their effects

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

17. Spain provided information on its package of PaMs implemented, adopted and planned in order to fulfil its commitments under the Convention and its Kyoto Protocol. Spain provided information on PaMs subdivided by sector, but not subdivided by gas, in the PaMs

<sup>3</sup> European Commission decision 2017/1471 of 10 August 2017 amending decision 2013/162/EU of 26 March 2013 to revise member States' AEAs for the period from 2017 to 2020.

<sup>4</sup> European Commission implementing decision 2013/634/EU of 31 October 2013 on the adjustments to member States' AEAs for the period from 2013 to 2020, pursuant to decision 406/2009/EC of 23 April 2009 of the European Parliament and of the Council.



section of the BR3; however, the information on PaMs is subdivided by gas in summary table 41 of the NC7 and in CTF table 3.

18. Spain provided information on implemented, adopted and planned mitigation actions in all sectors as well as on cross-sectoral measures. Most of the PaMs reported in the BR3, however, are measures that have already been implemented. During the review, Spain presented to the ERT information on additional PaMs that have been adopted or are in the planning stage and that are not described in the BR3, such as subsidies for the implementation of new projects within the framework of the Climate Projects under the Carbon Fund for a Sustainable Economy (FES-CO<sub>2</sub>); tenders to incentivize the development of new renewable energy projects; the Innovation Plan for Transport and Infrastructure 2018–2020; the update of the Energy Retrofitting of Buildings Programme (PAREER II); the update of the technical building code; the State Housing Plan 2018–2021; the implementation of energy renovation projects for existing buildings of the central administration; and the update of the Spanish Forest Plan.

19. Spain reported on its policy context and legal and institutional arrangements in place to implement its commitments. A detailed description of how the effectiveness of PaMs to mitigate GHG emissions is monitored and evaluated over time was not provided in the BR3 or in the NC7 (referred to in the BR3 in a footnote, which indicates that more information on institutional arrangements is provided in section 4.1 of the NC7); only a short note was included in the NC7 indicating that the National Climate Council is in charge of elaborating, tracking and evaluating the general principles for the implementation of climate change mitigation policies in Spain. During the review, Spain informed the ERT that it is working on improving this aspect of its reporting.

20. Spain provided information on a set of PaMs similar to those previously reported, with a few exceptions. It also provided information on changes made since the previous submission to its institutional, legal, administrative and procedural arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of the progress made towards its target. There have been no changes in the domestic institutional arrangements in Spain since its BR2, except for the creation in 2017 of an interministerial working group for coordinating the preparation of the draft law on climate change and energy transition and the National Integrated Energy and Climate Plan, and an interministerial commission for the preparation of the Spanish Circular Economy Strategy.

21. Spain did not include in its BR3 information on the methodologies used to estimate GHG emission reductions for the evaluated measures. In line with the finding contained in the report on the technical review of Spain's BR2, the ERT noted that including in the BR a description of the main assumptions or methodology used to project the emission reductions for every measure included in Spain's BR and CTF tables would improve the transparency of the reported information.

22. Spain reported on its self-assessment of compliance with its emission reduction target and national rules for taking action against non-compliance. The assessment is done for the emission target for the non-ETS sectors. Spain stated that, as an EU member State, it monitors progress through its reporting on GHG emissions in accordance with the EU monitoring mechanism regulation (525/2013).

23. 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. The 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.

24. 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, inter alia, 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), in addition to the sectors and gases already covered during the first and second phases.

25. The ESD became operational in 2013 and covers sectors outside the EU ETS (except LULUCF), including transport (excluding domestic and international aviation, and international maritime transport), residential and commercial buildings, agriculture and waste, together accounting for 55–60 per cent of the GHG emissions of the EU. The aim of the ESD is to decrease GHG emissions from non-ETS sectors in the EU by 10 per cent below the 2005 level by 2020 and it includes binding annual targets for each member State for 2013–2020.

26. Spain did not indicate any EU-wide mitigation actions currently under development. Among the mitigation actions that are critical for Spain's contribution to attaining the EU-wide 2020 emission reduction target are the Renewable Energy Action Plan 2011–2020, the Energy Efficiency Action Plan 2017–2020, the promotion of biofuels (Royal Decree 1085/2015) and the national tax on F-gases.

27. Spain introduced national-level policies to achieve its targets under the ESD and domestic emission reduction targets. The key policies reported are the Climate Projects; the Renewable Energy Action Plan 2011–2020; the Energy Efficiency Action Plan 2014–2020 and the Energy Efficiency Action Plan 2017–2020; the promotion of biofuels; and the national tax on F-gases. The mitigation effect of the national tax on F-gases is the most significant of the PaMs evaluated. Other policies that have delivered significant emission reductions are the promotion of biofuels and the Climate Projects.

28. Spain did not provide information on the domestic mitigation actions that are under development. However, during the review, the Party presented to the ERT information on additional PaMs that have been adopted or are in the planning stage, such as subsidies for the implementation of new projects within the framework of the Climate Projects under the Carbon Fund for a Sustainable Economy (FES-CO<sub>2</sub>); tenders to incentivize the development of new renewable energy projects; the Innovation Plan for Transport and Infrastructure 2018–2020; the update of the Energy Retrofitting of Buildings Programme (PAREER II); the update of the technical building code; the State Housing Plan 2018–2021; the implementation of energy renovation projects for existing buildings of the central administration; and the update of the Spanish Forest Plan. Table 4 provides a summary of the reported information on the PaMs of Spain.

29. The ERT noted that Spain reported in CTF table 3 the budget and funds allocated for implementation for only some of the PaMs. The ERT also noted that providing additional and complete information on the cost of mitigation actions in the next BR would enable Spain to further highlight within its report the most significant PaMs being implemented.

Table 4  
Summary of information on policies and measures reported by Spain

<i>Sector</i>	<i>Key PaMs</i>	<i>Estimate of mitigation impact by 2020 (kt CO<sub>2</sub> eq)</i>	<i>Estimate of mitigation impact by 2030 (kt CO<sub>2</sub> eq)</i>
Policy framework and cross-sectoral measures	EU ETS	NE	NE
	ESD	NE	NE
	Climate Projects under the Carbon Fund for a Sustainable Economy (FES-CO <sub>2</sub> )	1 995 <sup>a</sup>	2 070
Energy			
Transport	Promotion of biofuels (Royal Decree 1085/2015)	4 000 <sup>b</sup>	4 000 <sup>b</sup>
Renewable energy	Renewable Energy Action Plan 2011–2020	32 000 <sup>c</sup>	NE
Energy efficiency	Energy Efficiency Action Plan 2014–2020	NE	NE
	Energy Efficiency Action Plan 2017–2020	NE	NE

<i>Sector</i>	<i>Key PaMs</i>	<i>Estimate of mitigation impact by 2020 (kt CO<sub>2</sub> eq)</i>	<i>Estimate of mitigation impact by 2030 (kt CO<sub>2</sub> eq)</i>
IPPU	National tax on F-gases	6 000	11 000
Agriculture and LULUCF	National Rural Development Programme and the rural development programmes of the autonomous communities	NE	NE
Waste	State Waste Management Framework Plan 2016–2022	NE	NE

*Note:* The estimates of mitigation impact are estimates of emissions of CO<sub>2</sub> or CO<sub>2</sub> eq avoided in a given year as a result of the implementation of mitigation actions.

<sup>a</sup> Emission reductions are mainly included under the sectors covered by the ESD.

<sup>b</sup> During the review Spain noted that this estimate of mitigation impact should be 3,856 kt CO<sub>2</sub> eq instead of 4,000 kt CO<sub>2</sub> eq.

<sup>c</sup> Information provided by Spain during the review.

## (b) Policies and measures in the energy sector

30. **Energy supply.** The contribution of renewable energy sources to the total gross electricity generation in Spain in 2016 was 38.1 per cent, of which wind generation produced 46.7 per cent and hydroelectric sources 34.6 per cent (81.3 per cent together). Electricity generation from other sources in 2016 came from nuclear (21.3 per cent), natural gas (19.2 per cent), coal (13.6 per cent), oil products (6.2 per cent) and other technologies (1.6 per cent).<sup>5</sup> The key policy of the energy supply sector is the Renewable Energy Action Plan 2011–2020 (see para. 31 below).

31. **Renewable energy sources.** Renewable energy is promoted in Spain through the Renewable Energy Action Plan 2011–2020, comprising a package of more than 80 sectoral and cross-sectoral measures, with the aim of achieving a share of 20 per cent for renewable energy sources in the gross energy consumed in the country by 2020, including renewable energy use for electricity generation, transport, and heating and cooling. The measures in the Plan cover the promotion of wind, solar and hydroelectric generation. During the review, Spain provided information on the status of compliance with this target and the emission reductions expected from the Plan, namely 32,000 kt CO<sub>2</sub> eq in 2020 (the accumulated emission reductions expected from the Plan are 170,000 kt CO<sub>2</sub> eq by 2020). In 2016, renewable energy consumption accounted for 17.3 per cent of the total energy consumption used for electricity generation, transport, and heating and cooling. In 2015, the renewable energy installed capacity by technology was 20,348 MW for hydroelectric, 23,030 MW for wind, 4,662 MW for solar photovoltaic, 2,299 MW for solar thermal and 748 MW for renewable thermal. It is expected that an additional 3,910 MW solar photovoltaic, 4,106 MW wind and 200 MW solid biofuel and biogas capacities will be installed before 2020 as a result of two auctions carried out in 2017.

32. **Energy efficiency.** Energy efficiency is promoted in Spain through the National Energy Efficiency Action Plan 2014–2020, which was updated in 2017 to the National Energy Efficiency Action Plan 2017–2020. Measures include the efficient vehicle incentive and efficient driving programmes, and the energy efficiency programme for small and medium industries. The Plan established a national objective for primary energy consumption of 122.6 Mtoe by 2020, which represents a 24.7 per cent reduction in comparison with the baseline scenario. The target for the Plan is a cumulative reduction in energy consumption by 15,979 ktoe over the period 2014–2020. The annual energy savings were 555.75 and 522.87 ktoe in 2014 and 2015, respectively, in comparison with the baseline scenario. During the review, Spain provided additional information on the cumulative emission reduction for the period 2014–2020 of 21,969.61 kt CO<sub>2</sub> eq, attributable to the measures already implemented in 2014–2015.

33. **Residential and commercial sectors.** Energy efficiency measures have been developed for both existing buildings and new builds in order to reduce emissions from the residential and commercial sectors. The technical building code, the Energy Retrofitting of

<sup>5</sup> During the review, Spain noted that the contribution to electricity generation in 2016 of natural gas was 11.2 per cent and of other technologies was 8.0 per cent.

Buildings Programme (named PAREER) and the energy certification of new and existing buildings are examples of these measures. The technical building code for the energy performance of buildings is updated every five years; the current version is from 2013 and an updated version will be available in 2018. PAREER promotes improvements in the energy performance of building envelopes, lighting and thermal installations, as well as the replacement of conventional heating systems with systems using solar and geothermal energy. Spain has outlined a long-term plan to mobilize investments in the renovation of both public and private residential and commercial building stock. A long-term strategy for energy renovation in the building sector was launched in 2014, and an updated version was prepared in 2017. Under the strategy, the impact of measures already implemented to promote energy efficiency in buildings is reviewed and new measures proposed; for example, improvements in energy building certification and an update to PAREER.

34. **Transport sector.** GHG emissions from the transport sector accounted for 24.8 per cent of total GHG emissions and 42.4 per cent of emissions from non-ETS sectors in 2015. Spain has implemented measures to promote alternative fuels and technologies, such as electric vehicles, through the Strategy to Promote Alternative Energy Vehicles for 2014–2020, which was complemented by the National Action Framework for Alternative Energy in Transport in 2016. The Strategy includes various kinds of measure that promote alternative fuel use in road transport (i.e. compressed natural gas, liquefied natural gas, liquefied petroleum gas, bioethanol, biofuels, hydrogen and electricity), innovation, industrialization, installation of recharging points and public awareness-raising. It also includes economic incentives such as the Plan to Promote Mobility with Alternative Energy Vehicles (MOVEA Plan), the Aid Programme for the Purchase of Alternative Energy Vehicles (MOVALT Vehicles Plan) and the Aid Programme for the Implementation of Electric Vehicle Charging Infrastructure (MOVALT Infrastructure Plan), which award grants for the purchase of alternative fuel vehicles for road transport and the installation of recharging points for electric vehicles. Royal Decree 1085/2015 on the promotion of biofuels established mandatory goals for biofuel use, with blending targets of 4.3 per cent for 2016, 5.0 per cent for 2017, 6.0 per cent for 2018, 7.0 per cent for 2019 and 8.5 per cent for 2020. Measures to promote energy efficiency in the transport sector are included in the National Energy Efficiency Action Plan 2017–2020. Spain's implemented measures to reduce emissions in this sector also include shifting the modes of transporting people and goods (i.e. shifting from road to rail and sea transport).

35. **Industrial sector.** Most emissions from the industrial sector are included in the EU ETS; therefore, the EU ETS is the main measure in this sector. Industries related to the production of cement, steel, ceramic products, chemical products, lime and paper are examples of those included in the EU ETS. At the national level, the Energy Efficiency Action Plan 2017–2020 includes efficiency measures that affect the industrial sector, such as energy efficiency programmes for small and medium industries.

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

36. **Industrial processes.** The most important measure in this sector is the national tax on F-gases, which has been in force since January 2014 (Law 16/2013, Article 5). The tax applies to gases with a global warming potential greater than 150, and it includes HFCs, PFCs and SF<sub>6</sub>. Tax rates are set on a weight basis (per kg of gas) so that they are proportional to the global warming potential of each gas. Over a period of three years after its implementation in 2014, Spain achieved a more than 30 per cent reduction in F-gas emissions in comparison with 2013. In addition, a voluntary agreement between MAPAMA and all agents that participate in the life cycle of SF<sub>6</sub> in the country (equipment manufacturers, electricity generation companies and waste management companies) was implemented in 2015 with the goal of reducing SF<sub>6</sub> emissions in the period 2015–2020.

37. **Agriculture.** The National Rural Development Programme and the rural development programmes of the autonomous communities are the most important measures in this sector, according to information provided by Spain during the review. Within the programmes, which cover the agriculture and forestry sectors, are measures such as post-fire forest restoration, improvement of crop management practices, reduction in the use of fertilizers, conservation of forest carbon, forest management, and prevention of deforestation.

Fertilization optimization is another important measure with untapped potential according to information provided by Spain during the review. It is expected that future capacity-building activities carried out by MAPAMA and future regulations related to improving fertilization practices will result in greater emission reductions in this sector.

38. **LULUCF.** Measures in the forestry sector are promoted through the Spanish Forest Plan, which was approved in July 2002. The Plan, projected to have a duration of 30 years (2002–2032), is in the process of being reviewed. The restoration of vegetation cover, increase of forest area and sustainable forest management are the main measures promoted by the Plan. Sustainable forest management measures aim to increase the sink capacity of forests and reduce CO<sub>2</sub> emissions due to fires.

39. **Waste management.** Law 22/2011 on waste and contaminated soils established the general framework for promoting mitigation actions for reducing emissions from the waste sector. Among the most important measures in the waste sector, the National Programme on Waste Prevention 2014–2020 aims to achieve by 2020 a 10 per cent reduction in the weight of waste generated compared with the amount in 2010. Similarly, the More Food, Less Waste Strategy seeks to reduce the generation of waste from food. Other measures currently under implementation in Spain are the PIMA programme, which promotes the separation of waste during its collection as well as its reutilization, and the State Waste Management Framework Plan 2016–2022, which has a target of recycling and processing for reuse 50 per cent of municipal waste and limiting to 35 per cent the municipal waste deposited in landfills by 2020.

**(d) Response measures**

40. Spain reported on the assessment of the economic, environmental and social consequences of response measures on the basis of a qualitative evaluation. It presented several initiatives aimed at minimizing adverse impacts on other Parties, such as reduction of market imperfections; suppression of subsidies associated with the use of environmentally unclean technologies or technologies dangerous to the climate; investment in research centres working on clean technologies, for example, on carbon capture and storage systems; investment in research and development in industries vulnerable to mitigation action policies, such as the petrochemical industry, which is intensive in its use of fossil fuels; and technology transfer and provision of financial support to developing countries in order to promote the implementation of mitigation actions.

**(e) Assessment of adherence to the reporting guidelines**

41. The ERT assessed the information reported in the BR3 of Spain and identified issues relating to transparency and adherence to the UNFCCC reporting guidelines on BRs. The findings are described in table 5.

Table 5

**Findings on mitigation actions and their effects from the review of the third biennial report of Spain**

<i>No.</i>	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
1	Reporting requirement specified in paragraph 6  Issue type: transparency  Assessment: recommendation	The ERT noted that Spain provided information on PaMs by sector but not organized by gas in the BR3.  During the review, Spain acknowledged this requirement of the UNFCCC reporting guidelines on BRs.  The ERT recommends that Spain organize in its next BR, to the extent appropriate, the reporting of mitigation actions by sector and by gas.
2	Reporting requirement specified in paragraph 6  Issue type: transparency	The ERT noted that Spain did not report GHG emission reductions for most of the PaMs presented in the BR3 and CTF table 3 for 2020. The same issue was identified in the BR2.  Some explanations for the missing information on mitigation effects were provided in the BR3; however, during the review the ERT noted that mitigation impacts of

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation or encouragement
	Assessment: recommendation	further measures were estimated by Spain but yet not included in the BR3. Also during the review, Spain informed the ERT that it is working on improving this aspect of its reporting, and provided further explanations of the challenges that it faces and needs to solve in its effort to assess more systematically the mitigation effects of its mitigation actions.
3	Reporting requirement specified in paragraph 6  Issue type: transparency  Assessment: recommendation	<p>The ERT recommends that Spain include in its next BR and CTF table 3 either an estimate of the mitigation impact of individual PaMs or a clear explanation of the reason such information could not be reported due to its national circumstances that applies to all PaMs for which such estimates were not provided.</p> <p>The ERT noted that Spain reported in its BR3 only mitigation actions that have been implemented.</p> <p>During the review, Spain provided to the ERT information on some mitigation actions that have been adopted (but not yet implemented) or are in the planning stage and that are not described in the BR3, including some that were already publicly known at the time of the submission of the BR3.</p> <p>The ERT recommends that Spain provide information in its next BR on its mitigation actions that have been adopted (but not yet implemented) or are in the planning stage since its last NC or BR submission to achieve its economy-wide emission reduction target.</p>

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

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

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

42. For 2014 Spain reported in CTF table 4 annual total GHG emissions excluding LULUCF of 324,214.82 kt CO<sub>2</sub> eq, which is 12.6 per cent above the 1990 level. In 2014 emissions from non-ETS sectors relating to the target under the ESD amounted to 199,755.02 kt CO<sub>2</sub> eq, which is 11.5 per cent below the AEA for that year.

43. For 2015 Spain reported in CTF table 4 annual total GHG emissions excluding LULUCF of 355,661.52 kt CO<sub>2</sub> eq, which is 16.6 per cent above the 1990 level. In 2015 emissions from non-ETS sectors relating to the target under the ESD amounted to 196,153.20 kt CO<sub>2</sub> eq, which is 12.3 per cent below the AEA for that year.

44. Spain left blank the cells for the information requested on the use of units from LULUCF activities in CTF tables 4 and 4(a)II and reported “NA” in CTF table 4(a) for those activities. Regarding the use of units from market-based mechanisms under the Kyoto Protocol towards the achievement of its 2020 target, Spain left blank the cells for the information requested in CTF table 4 and reported 0.00 kt CO<sub>2</sub> eq in CTF table 4(b). In its BR3 Spain reported that it does not intend to use units from market-based mechanisms to achieve its target under the ESD and that its reporting regarding the use of market-based mechanisms concerns the emissions covered by the ESD. The Party also indicated that it does not intend to use units from LULUCF activities and that it plans to fulfil its commitments by 2020 by implementing only domestic measures. In response to a question from the ERT, Spain explained that, for activities under the EU ETS, the target is achieved at the EU level, so information on the use of market-based mechanisms by EU ETS installations would be found in the BR submitted by the EU. Nevertheless, the ERT considers that the transparency of the reporting could be improved by indicating “NA” in CTF tables 4 and 4(a)II instead leaving blank cells or by using custom footnotes. Table 6 illustrates Spain’s total GHG emissions, the contribution of LULUCF and the use of units from market-based mechanisms to achieve its target.

Table 6

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

<i>Year</i>	<i>Emissions excluding LULUCF (kt CO<sub>2</sub> eq)</i>	<i>Contribution of LULUCF (kt CO<sub>2</sub> eq)<sup>a</sup></i>	<i>Emissions including contribution of 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	287 828.14	NA	NA	0.00
2010	356 761.43	NA	NA	0.00
2011	356 950.74	NA	NA	0.00
2012	351 817.37	NA	NA	0.00
2013	322 873.54	NA	NA	0.00
2014	324 214.82	NA	NA	0.00
2015	335 661.52	NA	NA	0.00

*Sources:* Spain's BR3 and CTF tables 1, 4, 4(a)I, 4(a)II and 4(b).

<sup>a</sup> The EU's unconditional commitment to reduce GHG emissions by 20 per cent below the 1990 level by 2020 does not include emissions or removals from LULUCF.

<sup>b</sup> Spain left blank the column related to the use of market-based mechanisms in CTF table 4 and filled CTF table 4(b) with zeros.

45. In assessing the progress towards the achievement of the 2020 target, the ERT noted that Spain's emission reduction target for non-ETS sectors is 10 per cent below the 2005 level (see para. 15 above). The ERT also noted that the AEA (212,390.48 kt CO<sub>2</sub> eq) for 2020 is 9.7 per cent below the 2005 level (235,234.98 kt CO<sub>2</sub> eq) when taking into account the revised AEA and considering the extension of the scope of the EU ETS and the revised estimate of the 2005 GHG emissions for non-ETS sectors based on the 2017 annual submission. In 2015, Spain's emissions from non-ETS sectors (196,153.20 kt CO<sub>2</sub> eq) were 12.3 per cent below the AEA under the ESD for 2015. In addition, the ERT further noted that Spain does not intend to use market-based mechanisms to achieve its target and LULUCF is not included in the EU target.

46. The ERT noted that Spain is making progress towards its emission reduction target. It met its target under the ESD for 2013–2015 without using market-based mechanisms. On the basis of the results of the projections (see para. 57 below), the ERT also noted that the Party is making progress towards and expects to achieve its target under the Convention.

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

47. The ERT assessed the information reported in the BR3 of Spain and identified two issues relating to transparency and adherence to the UNFCCC reporting guidelines on BRs. The findings are described in table 7.

Table 7

**Findings on estimates of emission reductions and removals and the use of units from the market-based mechanisms and land use, land-use change and forestry from the review of the third biennial report of Spain**

<i>No.</i>	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation</i>
1	Reporting requirement specified in paragraph 9  Issue type: transparency  Assessment: recommendation	The ERT noted that Spain did not include in CTF tables 4 and 4(a)II any values related to the information requested on the use of units from LULUCF activities as a contribution towards the achievement of its 2020 target. In its BR3 Spain reported that it does not intend to use units from LULUCF activities and that it plans to fulfil its commitments by 2020 by implementing only domestic measures.  During the review, Spain explained that information on the contribution of LULUCF activities was omitted because this sector is not included in the EU target.  The ERT recommends that Spain improve the transparency of the reporting in its next BR by including information in CTF tables 4 and 4(a)II on the contribution of

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation
2	Reporting requirement specified in paragraph 10  Issue type: transparency  Assessment: recommendation	<p>LULUCF activities towards the achievement of its 2020 target and substantiating the reporting possibly with the use of notation keys or custom footnotes.</p> <p>The ERT noted that Spain did not include in CTF table 4 any values related to the information requested on the use of units from market-based mechanisms as a contribution towards the achievement of its 2020 target. In its BR3 Spain reported that it does not intend to use units from market-based mechanisms to achieve its target under the ESD and that it plans to fulfil its commitments by 2020 by implementing only domestic measures.</p> <p>During the review, Spain confirmed that it is not considering the use of units from market-based mechanisms to achieve its 2020 target for the sectors covered by the ESD and that the use of units for the sectors covered by the EU ETS would only be found in the BR of the EU. Spain stated that it would consider the suggestion of the ERT to use notation keys in its next BR.</p> <p>The ERT recommends that Spain include in its next BR information in CTF table 4 on the contribution from market-based mechanisms towards the achievement of its 2020 target, substantiating the reporting possibly with the use of notation keys or custom footnotes.</p>

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

### 3. Projections overview, methodology and results

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

48. Spain reported updated projections for 2020 and 2030 relative to actual inventory data for 2015 under the WEM scenario. However, the projections were constructed in coherence with the GHG inventory of the 2016 annual submission of Spain. The WEM scenario reported by Spain includes implemented and adopted PaMs until 2014. These PaMs were included through the estimation of their impact on past trends of subsector activity data and apparent emission factors. For a limited number of PaMs from 2015 and 2016, individual impact assessments were made, and thus they are included in the scenario. Spain provided a definition of its WEM scenario, explaining that it includes policies such as the Renewable Energy Action Plan 2011–2020 and the Energy Efficiency Action Plan 2014–2020; various EU directives and regulations (e.g. for large combustion facilities and for ecodesign); the PIMA programme; national regulations for new buildings; and the Strategy to Promote Alternative Energy Vehicles for 2014–2020. The definition indicates that the WEM scenario was prepared according to the UNFCCC reporting guidelines on NCs. Spain did not report a WAM or WOM scenario.

49. The projections are presented on a sectoral basis, using the same sectoral categories as those used in the reporting on mitigation actions, and on a gas-by-gas basis for CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, PFCs, HFCs and SF<sub>6</sub> (treating PFCs and HFCs collectively in each case) for 1990–2030 (and 2050). The projections are also provided in an aggregated format for each sector as well as for the Party total using global warming potential values from the AR4.

50. Spain did not report emission projections for indirect GHGs such as carbon monoxide, nitrogen oxides, non-methane volatile organic compounds or sulfur oxides.

51. Emission projections related to fuel sold to ships and aircraft engaged in international transport were reported separately and were not included in the totals. Spain reported some information on factors and activities affecting emissions for each sector.

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

52. The methodology used for the preparation of the projections is different from that used for the preparation of the emission projections for the BR2 and NC6. Spain reported supporting information to further explain the methodologies and the changes made since the NC6 and BR2. Notably, Spain indicated the reduction in the number of activity variables



used in the model from several hundreds to 111, which was based on the estimated evolution of the various sources of emissions. During the review, Spain clarified that the number of activity variables was reduced to improve the operability of the model used and the robustness of its results. Also, the Party mentioned that it sees the current method as transitory and that it expects to be able to base its projections on sectoral models. The methodology is now mostly based on a statistical analysis of past trends using ARIMA<sup>6</sup> models at the sectoral level, while the projections presented in the NC6 were obtained through the aggregation of a macroeconomic model and disaggregated models for subsectors. During the review, Spain noted that there were large uncertainties of key assumptions used in the projections, including the prediction of economic growth.

53. To prepare its projections, Spain relied on population and GDP growth as key underlying assumptions. The assumptions were updated on the basis of the most recent economic developments known at the time of the preparation of the projections analysis. Spain provided information in CTF table 5 on the key variables and assumptions used in the preparation of the projection scenarios, along with sectoral key underlying assumptions, such as energy consumption in the main energy subsectors and other relevant activity data for the agriculture and waste sectors. Regarding the macroeconomic context, Spain assumed a slight decrease in its population (by 2.2 per cent in the period 2015–2030 and 5.8 per cent in 2015–2050) and at the same time strong growth in its GDP (by 28.8 per cent in the period 2015–2030 and 65.0 per cent in 2015–2050).

54. Spain provided information on sensitivity analyses, which were conducted to characterize the impact of revising its GDP growth estimates. Over the period 2015–2030, an additional increase of 10 points in GDP would lead to an additional increase in emissions of 3.3 Mt CO<sub>2</sub> eq (or about 1 per cent of the emissions in 2030).

### (c) Results of projections

55. The projected emission levels under the WEM scenario and information on the quantified economy-wide emission reduction target are presented in table 8 and the figure below.

Table 8

#### Summary of greenhouse gas emission projections for Spain

	<i>GHG emissions (kt CO<sub>2</sub> eq per year)</i>	<i>Changes in relation to base-year<sup>a</sup> level (%)</i>	<i>Changes in relation to 1990 level (%)</i>
Quantified economy-wide emission reduction target under the Convention <sup>b</sup>	NA	NA	NA
Inventory data 1990 <sup>c</sup>	287 828.15	NA	NA
Inventory data 2015 <sup>c</sup>	335 661.52	16.6	16.6
WOM projections for 2020 <sup>d</sup>	NE	NE	NE
WEM projections for 2020 <sup>d</sup>	332 994.13	15.7	15.7
WAM projections for 2020 <sup>d</sup>	NE	NE	NE
WOM projections for 2030 <sup>d</sup>	NE	NE	NE
WEM projections for 2030 <sup>d</sup>	330 453.35	14.8	14.8
WAM projections for 2030 <sup>d</sup>	NE	NE	NE

<sup>a</sup> “Base year” in this column refers to the base year used for the target under the Convention, which for Spain is 1990.

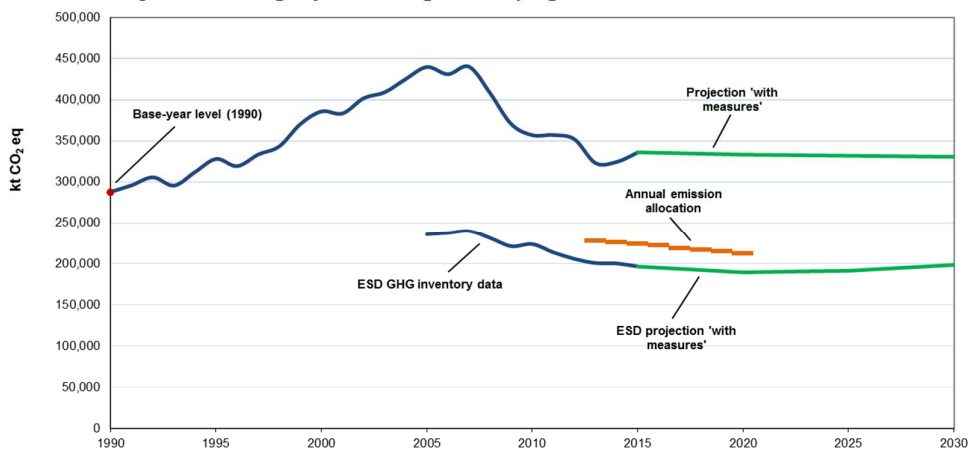
<sup>b</sup> The quantified economy-wide emission reduction target under the Convention is a joint target of the EU and its 28 member States. The target is to reduce emissions by 20 per cent compared with the base-year (1990) level by 2020.

<sup>c</sup> From Spain’s BR3 CTF table 6.

<sup>d</sup> From Spain’s NC7 and/or BR3.

<sup>6</sup> Autoregressive integrated moving average.

**Greenhouse gas emission projections reported by Spain**



Sources: (1) data for 1990–2015: Spain’s 2017 annual inventory submission, version 7; total GHG emissions excluding LULUCF; (2) data for 2016–2030: Spain’s NC7 and BR3; total GHG emissions excluding LULUCF.

56. Spain’s total GHG emissions excluding LULUCF in 2020 and 2030 are projected to be 332,994.13 and 330,453.35 kt CO<sub>2</sub> eq, respectively, under the WEM scenario, which represents an increase of 15.7 and 14.8 per cent, respectively, above the 1990 level. The 2020 projections suggest that Spain will continue contributing to the achievement of the EU target under the Convention (see para. 12 above).

57. Spain’s target for non-ETS sectors is to reduce its total emissions by 10 per cent below the 2005 level by 2020 (see para. 15 above). Spain’s AEAs, which correspond to its national emission target for non-ETS sectors, change nearly linearly from 227,563.76 kt CO<sub>2</sub> eq in 2013 to 212,390.48 kt CO<sub>2</sub> eq for 2020. According to the projections under the WEM scenario and information provided by Spain during the review, emissions from non-ETS sectors are estimated to reach 189,068.95 kt CO<sub>2</sub> eq by 2020. The projected level of emissions under the WEM scenario is 11.0 per cent below the AEAs for 2020. The ERT noted that this suggests that Spain expects to meet its target under the WEM scenario (see para. 15 above).

58. Spain presented the WEM scenario by sector for 2020 and 2030, as summarized in table 9.

Table 9

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

Sector	GHG emissions and removals (kt CO <sub>2</sub> eq)			Change (%)	
	1990	2020	2030	1990–2020	1990–2030
		WEM	WEM	WEM	WEM
Energy (not including transport)	154 287.53	176 674.94	168 161.54	14.5	9.0
Transport	58 966.57	87 074.69	95 677.82	47.7	62.3
Industry/industrial processes	29 994.07	32 530.08	31 952.53	8.5	6.5
Agriculture	34 755.16	28 443.86	27 331.27	–18.2	–21.4
LULUCF	–25 143.73	–33 048.67	–29 739.14	31.4	18.3
Waste	9 824.80	8 270.79	7 330.43	–15.8	–25.4
Other (specify)	–	–	–	–	–
<b>Total GHG emissions without LULUCF</b>	<b>287 828.15</b>	<b>332 994.13</b>	<b>330 453.35</b>	<b>15.7</b>	<b>14.8</b>

Source: Spain’s BR3 CTF table 6.

59. According to the projections reported for 2020 under the WEM scenario, the most significant emission reductions are expected to occur in the agriculture and waste sectors, amounting to projected reductions of 6,311.30 kt CO<sub>2</sub> eq (18.2 per cent) and 1,554.01 kt CO<sub>2</sub> eq (15.8 per cent) between 1990 and 2020, respectively. However, under the WEM scenario, emissions in the energy sector (including transport) are expected to increase by 50,495.53 kt CO<sub>2</sub> eq (23.7 per cent) between 1990 and 2020 and, within the energy sector, those in the transport subsector by 28,108.12 kt CO<sub>2</sub> eq (47.7 per cent). The pattern of projected emissions reported for 2030 under the same scenario is slightly different as emissions in the waste sector are projected to reach a plateau shortly after 2020 after significantly decreasing during the period 2010–2020. There is also projected to be a significant further increase in emissions from the transport subsector, and a continuation of the reduction in LULUCF removals that began in 2007, which is due mostly to the fact that tree plantation activities were more significant during the period 1993–2002 than in more recent years. Between 1990 and 2030, the projected emission reductions in the agriculture sector are 7,423.89 kt CO<sub>2</sub> eq (21.4 per cent) and in the waste sector are 2,494.37 kt CO<sub>2</sub> eq (25.4 per cent), while in the energy sector (including transport), for the same period, emissions are projected to increase by 50,585.26 kt CO<sub>2</sub> eq (23.7 per cent) and, within the energy sector, those in the transport subsector by 36,711.25 kt CO<sub>2</sub> eq (62.3 per cent).

60. Spain presented the WEM scenario by gas for 2020 and 2030, as summarized in table 10.

Table 10

**Summary of greenhouse gas emission projections for Spain presented by gas**

<i>Gas</i>	<i>GHG emissions and removals (kt CO<sub>2</sub> eq)</i>			<i>Change (%)</i>	
	<i>1990</i>	<i>2020</i>	<i>2030</i>	<i>1990–2020</i>	<i>1990–2030</i>
		<i>WEM</i>	<i>WEM</i>	<i>WEM</i>	<i>WEM</i>
CO <sub>2</sub>	231 309.75	281 549.10	282 503.53	21.7	22.1
CH <sub>4</sub>	35 168.64	29 878.01	28 470.36	–15.0	–19.0
N <sub>2</sub> O	17 081.85	12 628.83	12 872.44	–26.1	–24.6
HFCs	3 039.92	8 622.57	6 286.12	183.6	106.8
PFCs	1 164.38	93.93	99.41	806 595.4	853 659.1
SF <sub>6</sub>	63.61	221.69	221.49	248.5	248.2
NF <sub>3</sub>	0.00	0.00	0.00	NA	NA
<b>Total GHG emissions without LULUCF</b>	<b>287 828.15</b>	<b>332 994.13</b>	<b>330 453.35</b>	<b>15.7</b>	<b>14.8</b>

*Source:* Spain's BR3 CTF table 6.

61. For 2020 the most significant reductions are projected for CH<sub>4</sub> and N<sub>2</sub>O emissions: 5,290.63 kt CO<sub>2</sub> eq (15.0 per cent) and 4,453.02 kt CO<sub>2</sub> eq (26.1 per cent) between 1990 and 2020, respectively. However, during the review, Spain explained that approximately half of the CH<sub>4</sub> reductions are due to an adjustment to the inventory of the 2017 annual submission, which could not be properly included in the projections because they were calculated on the basis of the GHG inventory of the 2016 annual submission. In addition, CO<sub>2</sub> and HFC emissions are projected to increase by 50,239.35 kt (21.7 per cent) and 5,582.65 kt CO<sub>2</sub> eq (183.6 per cent) between 1990 and 2020, respectively.

62. For 2030 the most significant reductions are also projected for CH<sub>4</sub> and N<sub>2</sub>O emissions: 6,698.28 kt CO<sub>2</sub> eq (19.0 per cent) and 4,209.41 kt CO<sub>2</sub> eq (24.6 per cent) between 1990 and 2030, respectively. In addition, CO<sub>2</sub> and HFC emissions are projected to increase by 51,193.78 kt (22.1 per cent) and 3,246.20 kt CO<sub>2</sub> eq (106.8 per cent) between 1990 and 2030, respectively.

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

63. The ERT assessed the information reported in the BR3 of Spain and identified issues relating to completeness, transparency and adherence to the UNFCCC reporting guidelines on BRs. The findings are described in table 11.

Table 11

**Findings on greenhouse gas emission projections reported in the third biennial report of Spain**

<i>No.</i>	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
1	Reporting requirement specified in paragraph 28  Issue type: completeness  Assessment: encouragement	<p>The ERT noted that in the BR3 Spain did not report a WOM or WAM scenario, and that it did not include any explanation as to why such scenarios were not reported. The ERT noted that a WAM scenario was reported in the BR2.</p> <p>During the review, Spain explained that it did not develop a WOM scenario as it considered that the results of such a scenario could be difficult to interpret, and that a WAM scenario was not developed because existing measures are sufficient to reach the country's 2020 target.</p> <p>The ERT encourages Spain to include in its next BR a WOM and WAM scenario or to clearly explain the reasons for not including such scenarios in the BR.</p>
2	Reporting requirement specified in paragraph 32  Issue type: transparency  Assessment: encouragement	<p>For the WEM projection scenario, the starting point should generally be the latest year for which inventory data are available in the BR. The ERT noted that Spain used 2014 as the starting point for its WEM projections and, in general, inventory data from the 2016 annual submission for developing its WEM projection scenario, while providing inventory data for up to 2015 (based on the 2017 annual submission) in the BR3. Spain explained in the NC7 that the inventory data from the 2017 annual submission became available too late for its projections analysis. It also explained that the absence of data on recalculations for the inventory, when elaborating the projections, led to a small discrepancy for the agriculture sector between the inventory and the projections.</p> <p>In response to a question from the ERT during the review, Spain explained that the absence of data on recalculations has likely resulted in an underestimation in the projections for the agriculture sector of approximately 3 Mt per year for 2015–2030 (thus including the period 2015–2030).</p> <p>The ERT encourages Spain to use in its next BR the latest year for which inventory data are available as the starting point for its WEM projection scenario, and, if relevant, for the WAM projection scenario, and to address any methodological issue, such as the absence of data on recalculations, that may lead to an underestimation or overestimation of the projection scenarios.</p>
3	Reporting requirement specified in paragraph 37  Issue type: transparency  Assessment: recommendation	<p>The ERT noted that, in the column “base year” of CTF table 6(a), Spain reported emissions for the base year used for the target under the Kyoto Protocol, while this column should be used by Parties for reporting information if the base year for their inventories is different from 1990 in accordance with Article 4, paragraph 6, of the Convention. The ERT also noted that 1990 is the base year for Spain's GHG inventories under the Convention.</p> <p>During the review, Spain acknowledged the need to adjust its approach to this matter in its next BR.</p> <p>The ERT recommends that Spain report in its next BR GHG emissions for the year 1990 in the column “base year” of CTF table 6(a) and any related CTF tables.</p>
4	Reporting requirement specified in paragraph 44  Issue type: transparency  Assessment: encouragement	<p>The ERT noted that the projections report referenced in Spain's BR3, where more detailed information related to the model and approach used in the projections analysis is provided, was not available at the time of the review.</p> <p>In response to a question from the ERT during the review, Spain provided an updated web link to the report. The report includes a summary of the projections, additional information on the approach used and a complete list of the activity data used.</p> <p>The ERT encourages Spain to include in its next BR references to documents containing more detailed information related to the model and approach used for its projection scenarios and to ensure that the references remain accessible over time</p>

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation or encouragement
5	<p>Reporting requirement specified in paragraph 45</p> <p>Issue type: completeness</p> <p>Assessment: encouragement</p>	<p>The ERT noted that Spain did not report on the main differences in results between the projections presented in the BR3 and those presented in previous BRs.</p> <p>During the review, Spain provided to the ERT information on the differences in the results of the WEM projections between its BR3 and BR2.</p> <p>The ERT encourages Spain to report in its next BR on the main differences in the results between projections in the current BR and those in previous BRs.</p>
6	<p>Reporting requirement specified in paragraph 46</p> <p>Issue type: transparency</p> <p>Assessment: encouragement</p>	<p>The ERT noted that, while the sensitivity of the projections to underlying assumptions should be discussed qualitatively and, where possible, quantitatively, Spain only reported in its BR3 (via a reference to its NC7) a sensitivity analysis of its projections to the impact of changes in the assumed growth of GDP. The ERT also noted that, in the report on the technical review of the NC6, Spain was encouraged to improve the transparency of its reporting by exploring ways of complementing the textual description of the analysis of sensitivities with a tabular or graphical presentation, providing a quicker overview of the sensitivities of the sectoral and total emissions to the identified parameters with the most impact. The ERT further noted that, in the NC7, Spain did not report a tabular or graphical overview of the sensitivities of the sectoral and total emissions projections to GDP growth, and it did not report on the impact of other important underlying assumptions that influence its projection estimates with the most impact.</p> <p>During the review, Spain acknowledged the need to improve the transparency of its reporting on sensitivity analyses.</p> <p>The ERT encourages Spain to report in its next BR on the sensitivity of its projections to main underlying assumptions in addition to GDP growth, and reiterates the previous encouragement to improve the transparency of its reporting by exploring ways to complement the textual description of sensitivities by providing a quick overview of the sensitivities of the sectoral and total emissions projections to the identified underlying assumptions with the most impact.</p>
7	<p>Reporting requirement specified in paragraph 47 and CTF table 5</p> <p>Issue type: transparency</p> <p>Assessment: encouragement</p>	<p>The ERT noted that Spain did not report information on tax levels and international fuel prices among the key variables in the BR3 and CTF table 5 for its projections analysis.</p> <p>During the review, Spain explained that those variables were not included in its reporting given that they were not used as an input to the models used to derive the projections. The ERT noted, however, that the result of the projections may not be relevant if changes in those variables over the projection period were not consistent with the trends over the historical period used to calibrate the models. The ERT thus noted that similar trends were implicitly assumed for the evolution of tax levels and international fuel prices over the projection period as the one observed over the calibration period.</p> <p>The ERT encourages Spain to report in its next BR information on tax levels and international fuel prices as key underlying variables, in addition to other key underlying assumptions, even if those assumptions only implicitly affect the results of the projections.</p>
8	<p>Reporting requirement specified in paragraph 48</p> <p>Issue type: transparency</p> <p>Assessment: encouragement</p>	<p>The ERT noted that in CTF table 5 Spain included information on sector-specific factors and activities, especially for the agriculture and waste sectors. The ERT also noted, however, that the information provided on waste generation in that table was not consistent with Spain's official statistics for 2010 and 2015.</p> <p>During the review, Spain clarified that this variable was not directly used to construct the projections and, therefore, this error did not affect the results of the projections.</p> <p>The ERT encourages Spain to ensure in its next BR that the information provided on the evolution of the variables included in its projections is consistent with its official statistics, and, if appropriate, to explain any discrepancies.</p>

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

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

### **1. Approach and methodologies used to track support provided to non-Annex I Parties**

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

64. In the BR3 Spain referred to chapter 7 of its NC7, which contains information on the provision of financial, technological and capacity-building support required under the Convention.

65. Spain provided details on what “new and additional” support it has provided and clarified how this support is determined as being “new and additional”. By Spain’s definition, contributions are considered to be “new and additional” when the support is given to activities that are new and specific to climate change.

66. Spain reported the financial support that it has provided to non-Annex I Parties, distinguishing between support for mitigation and adaptation activities and recognizing the capacity-building elements of such support. Spain explained how it tracks finance for adaptation and mitigation using various methodologies. For bilateral contributions of ODA, the Rio markers are used. For multilateral contributions of ODA, Spain differentiates between contributions to specific climate change funds or programmes (where 100 per cent is accounted for) and general contributions to multilateral organizations. In the latter case, each multilateral organization informs Spain of the proportion of the contribution (received by the organization from Spain) that is destined for climate change activities. Finally, for OOF, the methodology used is based on an analysis of the description of the projects financed and an assessment of whether the projects have relevance to climate change.

67. The BR3 references chapter 7 of Spain’s NC7, which includes information on the national approach to tracking the provision of support, indicators, delivery mechanisms used and allocation channels tracked. Spain included information on how it has refined its approach to tracking climate support and methodologies. The approach is presented in section 7.2 of the NC7 and is based on information from national organizations (e.g. Fondo para la Internacionalización de la Empresa, and Compañía Española de Seguros de Créditos a la Exportación and Compañía Española de Financiación del Desarrollo) in charge of the provision of ODA and OOF. The key improvements implemented by Spain and reported in the NC7 are the use of the Rio markers for bilateral contributions and the availability (since 2015) of information from multilateral organizations communicated to Spain on the proportion of general contributions destined for climate change activities.

68. Spain described the methodology and underlying assumptions used for collecting and reporting information on financial support, including guidelines, eligibility criteria and indicators, in section 7.2.2 of its NC7. The result of the use of that methodology is reflected in the detailed lists of financial support activities included in annex 4 to the NC7 (tables 7.1–7.4 and 8.1–8.4).

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

69. The ERT assessed the information reported in the BR3 of Spain and recognized that the reporting is complete, transparent and adhering to the UNFCCC reporting guidelines on BRs. No issues related to the topics discussed in this chapter of the review were raised during the review.

## 2. Financial resources

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

70. Spain 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.

71. Spain indicated what “new and additional” financial resources it has provided and clarified how it has determined such resources as being “new and additional”. By Spain’s definition, contributions are considered to be “new and additional” when the support is given to activities that are new and specific to climate change.

72. The Spanish policy on development cooperation is framed in the Fourth Master Plan for Spanish Development Cooperation (2013–2016). The Plan addresses climate change and the environment and highlights the importance of addressing specific actions but also of integrating them into all actions of the Spanish cooperation. Spain recently approved the Fifth Master Plan for Spanish Development Cooperation for the period 2018–2021, with the 2030 Agenda for Sustainable Development and the Paris Agreement as its core elements. In its NC7 (as referred to in the BR3) Spain 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 technology development and transfer and capacity-building related to mitigation and adaptation. Spain reported information on the assistance that it has provided to developing country Parties that are particularly vulnerable to the adverse effects of climate change to help them to meet the costs of adaptation to those adverse effects. Spain noted in its NC7 and in information provided to the ERT during the review that it considers the following countries to be particularly vulnerable: Bolivia (Plurinational State of), Colombia, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Nicaragua, Paraguay and Peru in Latin America and the Caribbean; Mauritania, Morocco, State of Palestine and the Sahrawi population in Northern Africa and the Middle East; Equatorial Guinea, Ethiopia, Mali, Mozambique, Niger and Senegal in sub-Saharan Africa; and Philippines in Asia. In the NC7, Spain reported a contribution of USD 0.22 million to the Adaptation Fund in the period 2013–2016.

73. With regard to the most recent financial contributions aimed at enhancing the implementation of the Convention by developing countries, Spain reported that its climate finance has been allocated on the basis of agreements with the recipient countries for bilateral support, and on the basis of information provided by multilateral organizations that takes into account the needs of developing countries, for multilateral support. Spain clarified that, in the case of OOF, each institution managing funds includes in each instrument its own specific requirements. In the particular case of funds managed by AECID, the country association framework, which is an agreement between Spain and the recipient country, sets out how the needs for support are identified by the recipient country and AECID. Table 12 includes some of the information reported by Spain on its provision of financial support.

Table 12

#### Summary of information on provision of financial support by Spain in 2015–2016

(Millions of United States dollars)

<i>Allocation channel of public financial support</i>	<i>Year of disbursement</i>	
	<i>2015</i>	<i>2016</i>
Official development assistance <sup>a</sup>	1 732.22	4 613.30
Climate-specific contributions through multilateral channels, including:	12.35	81.09
Global Environment Facility	3.66	6.97
Least Developed Countries Fund	0.00	0.00
Special Climate Change Fund	0.00	0.00
Adaptation Fund	0.00	0.00

<i>Allocation channel of public financial support</i>	<i>Year of disbursement</i>	
	<i>2015</i>	<i>2016</i>
Green Climate Fund	1.11	1.11
Trust Fund for Supplementary Activities	0.00	0.00
Financial institutions, including regional development banks	6.36	72.36
United Nations bodies	1.22	0.65
Other		
Climate-specific contributions through bilateral, regional and other channels	498.26	563.72
Other		

<sup>a</sup> Sources: (1) Query Wizard for International Development Statistics, available at <http://stats.oecd.org/qwids/>; (2) BR3 CTF tables; (3) table 7.1 in annex 4 to Spain's NC7 for 2013 and revised table 7.2 in annex 4 to its NC7 for 2014 on provision of financial support, provided by Spain during the review.

74. The ERT noted inconsistencies between the BR3 and the NC7 in the information reported for the years included in both reports (2015 and 2016): some financial support activities (representing USD 1.2 million) were presented as bilateral in the NC7 but as multilateral in the BR3. These inconsistencies were corrected and clarified during the review.

75. Spain reported on its climate-specific public financial support, totalling USD 510.61 million in 2015 and USD 644.81 million in 2016. With regard to the status of these contributions (disbursed or committed), all public financial contributions to multilateral channels reported by Spain in CTF tables 7 (for 2015 and 2016) were identified as disbursed. For public financial support through bilateral, regional and other channels, Spain reported that for 2015 (CTF table 7(b)) all ODA was identified as disbursed, while 18 per cent of OOF was identified as disbursed and 82 per cent as committed. For 2016 (CTF table 7(b)) 100 per cent was identified as committed. The ERT noted that Spain increased its climate public financial support by 24.8 per cent between the periods 2013–2014 and 2015–2016. During the reporting period, Spain placed a particular focus on supporting Angola, the Dominican Republic, Ecuador, Kenya, Mexico, Panama, South Africa, Turkey and Uruguay, for which it allocated approximately USD 850 million. Information on financial support from the public sector provided through multilateral and bilateral channels and the allocation of that support by priority is presented in table 13.

Table 13  
**Summary of information on channels of financial support used in 2015–2016 by Spain**  
(Millions of United States dollars)

<i>Allocation channel of public financial support</i>	<i>Year of disbursement</i>				<i>Share (%)</i>	
	<i>2015</i>	<i>2016</i>	<i>Difference</i>	<i>Change (%)</i>	<i>2015</i>	<i>2016</i>
Support through bilateral and multilateral channels allocated for:						
Mitigation	390.26	479.26	88.99	22.8	76.4	74.3
Adaptation	31.33	72.06	40.73	130.0	6.1	11.2
Cross-cutting	89.02	93.50	4.48	5.0	17.4	14.5
Other	0.00	0.00	NA	NA	NA	NA
<b>Total</b>	<b>510.61</b>	<b>644.81</b>	<b>134.21</b>	<b>26.3</b>	<b>100.0</b>	<b>100.0</b>
Detailed information by type of channel						
Multilateral channels						
Mitigation	0.00	0.00	NA	NA	NA	NA
Adaptation	0.00	0.00	NA	NA	NA	NA



Allocation channel of public financial support	Year of disbursement				Share (%)	
	2015	2016	Difference	Change (%)	2015	2016
Cross-cutting	12.35	81.09	68.74	556.6	100.0	100.0
Other	0.00	0.00	NA	NA	NA	NA
<b>Total</b>	<b>12.35</b>	<b>81.09</b>	<b>68.74</b>	<b>556.6</b>	<b>100.0</b>	<b>100.0</b>
Bilateral channels						
Mitigation	390.26	479.25	88.90	22.8	78.3	85.0
Adaptation	31.33	72.06	40.73	130.0	6.3	12.8
Cross-cutting	76.67	12.41	-64.26	-83.8	15.4	2.2
Other	0.00	0.00	NA	NA	NA	NA
<b>Total</b>	<b>498.26</b>	<b>563.72</b>	<b>65.47</b>	<b>13.1</b>	<b>100.0</b>	<b>100.0</b>
Multilateral compared with bilateral channels						
Multilateral	12.35	81.09	68.74	556.6	2.4	12.6
Bilateral	498.26	563.72	65.47	13.1	97.6	87.4
<b>Total</b>	<b>510.61</b>	<b>644.81</b>	<b>134.21</b>	<b>26.3</b>	<b>100.0</b>	<b>100.0</b>

Source: CTF tables 7, 7(a) and 7(b) of the BR3 of Spain.

76. The BR3 includes detailed information on the financial support provided through multilateral, bilateral and regional channels in 2015 and 2016. More specifically, Spain contributed through multilateral channels, as reported in the BR3 and in CTF table 7(a), USD 12.35 and 81.09 million for 2015 and 2016, respectively. The contributions were made to specialized multilateral climate change funds, such as the Global Environment Facility, the Green Climate Fund, the World Bank, the African Development Bank, the Inter-American Development Bank, the United Nations Development Programme and UNEP.

77. The BR3 and CTF table 7(b) also include detailed information on the total financial support provided through bilateral and regional channels (USD 498.26 and 563.72 million in 2015 and 2016, respectively). The ERT noted that in some cases in CTF table 7(b) it was not possible to identify the region or countries and project details or descriptions of the financial support provided by Spain. During the review, Spain highlighted the large amount of information on these activities that was assessed, and explained that information missing from the tables was indicated as “not specified” (“no especificado” in Spanish), which means that the information was not available when the financial contributions were analysed.

78. The BR3 provides information on the types of support provided. In terms of the focus of public financial support, as reported in CTF table 7 for 2015, the shares of the total public financial support allocated for mitigation, adaptation and cross-cutting projects were 76.4, 6.1 and 17.4 per cent, respectively. In addition, 2.4 per cent of the total public financial support was allocated through multilateral channels and 97.6 per cent through bilateral, regional and other channels. In 2016, the shares of total public financial support allocated for mitigation, adaptation and cross-cutting projects were 74.3, 11.2 and 14.5 per cent, respectively. Furthermore, 12.6 per cent of the total public financial support was allocated through multilateral channels and 87.4 per cent through bilateral, regional and other channels.

79. The ERT noted that, in 2015 and 2016, 100 per cent of financial contributions made through multilateral channels were allocated to cross-cutting mitigation and adaptation activities, as reported in CTF table 7(a). Regarding the financial contributions made through bilateral, regional and other channels and reported in CTF tables 7(b), the ERT noted that the sectors receiving support in 2015 and 2016 were, among others, agriculture, health, water and sanitation, energy, transport, forestry and industry.

80. 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, concessional loans, non-concessional loans, export credits and equities. The ERT noted that the concessional loans and export credits provided in 2015 and 2016 accounted for a significant portion of the total public financial support.

81. In the BR3 Spain referred to chapter 7 of its NC7, where it reported on how it uses public funds to promote and leverage private sector financial support for developing countries, which it sees as pivotal to effectively increasing mitigation and adaptation efforts in developing countries. Spain did not indicate for which activities private finance is mobilized. In the case of ODA bilateral contributions and also multilateral contributions to development banks, many of the programmes and instruments promote the mobilization of other financial flows, such as private finance flows. Spain reported that for OOF, in almost all cases, complementarity with other financial sources (private and public) is considered by the relevant donor agencies; that is, the organizations that manage OOF seek to leverage other sources (private and public) in order to promote the scaling up of investments.

82. Spain explained that, although there is not yet an agreed methodology for quantifying and reporting on private financial flows leveraged through bilateral climate finance for mitigation and adaptation activities in non-Annex I Parties, there are relevant initiatives in this regard. For example, the Spanish Institute for Foreign Trade, an agency of the Ministry of Economy, Industry and Competitiveness, supports the private sector in identifying climate change related opportunities for business. While the Spanish Green Growth Group, created in 2014, is a private sector initiative of 30 Spanish companies interested in promoting a road map towards a low-emission economy and the mobilization of private sector financial resources at the national and international level.

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

83. The ERT assessed the information reported in the BR3 of Spain and identified issues relating to transparency and adherence to the UNFCCC reporting guidelines on BRs. The findings are described in table 14.

Table 14

**Findings on financial resources from the review of the third biennial report of Spain**

<i>No.</i>	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
1	Reporting requirement specified in paragraph 18  Issue type: transparency  Assessment: encouragement	The ERT noted that in some cases in CTF table 7(b) it was not possible to identify the region or countries and project details or descriptions of the financial support provided and activities carried out by Spain. The ERT also noted that footnote b to CTF table 7(b) indicates that Parties should report, to the extent possible, on the details included in that table.  During the review, Spain explained that most of the ODA through bilateral and regional contributions were gathered and presented by country, region and sector, and that more detailed information can be found on the website of the Development Assistance Committee of the Organisation for Economic Co-operation and Development. In some cases, information related to country or region was not available when analysing the contributions, so it was not presented in CTF table 7(b).  The ERT encourages Spain to include in its next BR all the required information on the financial support provided in the CTF table 7(b), or to explain why it was not possible to obtain or provide such information.
2	Reporting requirement specified in paragraph 18  Issue type: transparency  Assessment: encouragement	The ERT noted that decision 19/CP.18, paragraph 5, encourages developed country Parties to ensure consistency, to the extent possible, between the information provided in their BRs and NCs. The ERT also noted inconsistencies between Spain's NC7 and BR3 in the information on financial support for the years included in both reports (2015 and 2016): some financial support activities (representing USD 1.2 million) were presented as bilateral in the NC7 but as multilateral in the BR3.  During the review, Spain clarified and corrected the inconsistencies.  The ERT encourages Spain to ensure consistency, to the extent possible, in accordance with decision 19/CP.18, paragraph 5, between its NC and BR in the information on financial support provided by adopting the same criteria to classify the financial support activities for both reports.

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

### 3. Technology development and transfer

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

84. Spain provided information on steps, measures and activities related to technology transfer, access and deployment benefiting developing countries, including information on activities undertaken by the public and private sectors. It provided examples of support provided for the deployment and enhancement of the endogenous capacities and technologies of non-Annex I Parties. Detailed information on the Party's activities related to technology transfer was included in tables 8 and 9 of annex 1 to its BR3. The ERT noted that this information did not include data on total funding and years of operation per activity, and that it did not include success and failure stories. During the review, Spain explained that it was not feasible to provide data on total funding and years of operation per activity, and that all activities undertaken were considered success stories.

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 reported includes source of funding (public or private), status and a description of measures and activities.

86. The ERT noted that Spain reported on its PaMs in relation to technology transfer, in particular on measures taken to promote, facilitate and finance the transfer and deployment of climate-friendly technologies. Spain did not include information on success and failure stories related to technology development and transfer in its BR3. The Party highlighted the REGATTA project, implemented by UNEP and supported mainly by Spain, the main objective of which is to strengthen capacity-building and knowledge-sharing in relation to climate change technologies and experience for adaptation and mitigation in Latin America and the Caribbean. Other examples of technology transfer activities described by Spain relate to marine meteorology, wind power and solar energy technologies, and energy efficiency.

87. In its BR3 (in which it referenced section 7.3 of its NC7) Spain provided a list of the public organizations in charge of activities related to technology transfer in the country. Each organization has its own mechanism to track its actions and programmes. Both hard and soft technologies are covered. Examples of activities developed by public organizations include those related to marine meteorology, wind power and solar energy technologies, and development of sustainable energy generation systems. The Party explained that while technology transfer activities are predominantly managed by public organizations, some activities are implemented by private institutions, and examples were presented in the BR3 (via a reference to section 7.3 of the NC7), such as support for the development of solar energy technologies and technology cooperation between companies in Ibero-America. As an illustration of how different Spanish initiatives work together, Spain explained that, for example, the REGATTA project works in the transfer of technologies taking into account the priorities identified by RIOCC.

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

88. The ERT assessed the information reported in the BR3 of Spain and identified an issue relating to completeness and adherence to the UNFCCC reporting guidelines on BRs. The finding is described in table 15.

Table 15

#### Findings on technology development and transfer from the review of the third biennial report of Spain

<i>No.</i>	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
1	Reporting requirement specified in paragraph 21	The ERT noted that Spain did not include information on success and failure stories related to technology development and transfer in its BR3.

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation or encouragement
Issue type: completeness	Assessment: encouragement	During the review, Spain clarified that all reported activities are considered success stories.  The ERT encourages Spain to provide in its next BR information on success and failure stories related to technology development and transfer.

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

#### 4. Capacity-building

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

89. In the BR3 (via a reference to chapter 7 of the NC7) and CTF table 9, Spain supplied information on how it has provided capacity-building support for mitigation, adaptation and technology development and transfer that responds to the existing and emerging needs identified by non-Annex I Parties. Spain described individual measures and activities related to capacity-building support in textual and tabular format. Examples include supporting RIOCC regional workshops (including annual meetings and activities related to development of tools and methodologies for designing nationally determined contributions, climate finance, local adaptation to climate change, and water economy); training activities on meteorological, climatological and hydrological database management systems; courses on the use of satellite products for agrometeorological applications; and courses on the use of municipal solid waste as a source of energy.

90. Spain reported that it has supported climate-related capacity development activities relating to adaptation, mitigation and other sectors. Spain also reported that it has responded to the existing and emerging capacity-building needs of non-Annex I Parties by following the principles of cooperation between donors and across programmes. In particular, Spain reported that the needs of non-Annex I Parties and their priorities are taken into account in the cooperation agreements between Spanish organizations and their counterparts in non-Annex I Parties. Spain provided a list of seven national organizations involved in capacity-building activities. Most of the activities reported in CTF table 9 are supported by Plan INTERCOONECTA, managed by AECID.

91. As an example of how the training needs of non-Annex I Parties are taken into account, Spain referred to the line of action determined by two Ibero-American Conferences of Directors promoted and supported by the Spanish State Meteorological Agency and MAPAMA under the Conference of Directors of Ibero-American Meteorological and Hydrological Services. The training needs identified are to be addressed by implementing relevant courses and workshops in cooperation with other organizations such as the World Meteorological Organization and the United Nations Educational, Scientific and Cultural Organization. Another example reported in the NC7 is related to the training activities of RIOCC, which are developed on the basis of the priorities identified every year by the countries that are part of its network.

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

92. The ERT assessed the information reported in the BR3 of Spain and recognized that the reporting is complete, transparent and adhering to the UNFCCC reporting guidelines on BRs. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

### III. Conclusions and recommendations

93. The ERT conducted a technical review of the information reported in the BR3 and CTF tables of Spain in accordance with the UNFCCC reporting guidelines on BRs. The ERT concludes that the reported information mostly adheres to the UNFCCC reporting guidelines

on BRs and provides an overview of emissions and removals related to the Party's quantified economy-wide emission reduction target; assumptions, conditions and methodologies related to the attainment of the target; progress made by Spain in achieving its target; and the Party's provision of support to developing country Parties.

94. Spain's total GHG emissions excluding LULUCF covered by its quantified economy-wide emission reduction target were estimated to be 16.6 per cent above its 1990 level, whereas total GHG emissions including LULUCF were 13.0 per cent above its 1990 level, in 2015. The increase in total emissions of 52.8 per cent over the period 1990–2007 was driven mainly by strong economic and population growth, while the economic downturn and population stabilization that followed in the period 2008–2014, together with the mitigation PaMs implemented by Spain, contributed to the subsequent decrease in emissions.

95. Under the Convention, Spain committed to contributing to the achievement of the joint EU quantified economy-wide emission reduction target of a 20 per cent reduction in emissions below the 1990 level by 2020. The target covers all sectors and CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs and SF<sub>6</sub>, expressed using global warming potential values from the AR4. Emissions and removals from the LULUCF sector are not included. The EU generally allows its member States to use units from the Kyoto Protocol mechanisms and new market mechanisms for compliance purposes up to an established limit and subject to a number of restrictions on the origin and the type of project. Companies can make use of such units to fulfil their requirements under the EU ETS.

96. Under the ESD, Spain has a target of reducing its emissions by 10 per cent below the 2005 level by 2020. The 2013–2020 linear progression in Spain's AEAs (its national emission target for non-ETS sectors) is 227,563.75–212,390.48 kt CO<sub>2</sub> eq.

97. 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. The mitigation actions with the most significant mitigation impact are the Climate Projects; the Renewable Energy Action Plan 2011–2020; the Energy Efficiency Action Plan 2014–2020 and the Energy Efficiency Action Plan 2017–2020; the Royal Decree on the promotion of biofuels; and the national tax on F-gases.

98. For 2015 Spain reported in CTF table 4 total GHG emissions excluding LULUCF of 335,661.52 kt CO<sub>2</sub> eq. Spain also reported that it does not plan to use units from the market-based mechanisms to achieve its target for non-ETS sectors. It further reported that the LULUCF sector is not included in the EU target, and that it plans to fulfil its commitments by 2020 by implementing only domestic measures.

99. The GHG emission projections provided by Spain in its BR3 correspond to the WEM scenario. In the WEM scenario, emissions are projected to be 15.7 per cent above the 1990 level by 2020. On the basis of the reported information, the ERT concludes that Spain expects to meet its 2020 target under the WEM scenario and to contribute to the EU meeting its 2020 target. Spain's target for non-ETS sectors is to reduce its total emissions by 10 per cent below the 2005 level by 2020. According to the projections under the WEM scenario, emissions from non-ETS sectors are estimated to be 11.0 per cent below the AEAs for 2020. On the basis of the reported information, the ERT concludes that Spain expects to meet its target for non-ETS sectors.

100. The ERT noted that Spain is making progress towards its emission reduction target by implementing mitigation actions that deliver emission reductions alongside those resulting from the impact of the economic crisis that Spain faced between 2008 and 2014. On the basis of the results of the projections for 2020 under the WEM scenario, the ERT noted that Spain may overachieve its emission reduction target by 2020, including by further strengthening existing PaMs.

101. Spain continues to provide climate financing to developing countries in line with its climate finance programmes, such as the Master Plans for Spanish Development Cooperation. Spain's contributions totalled USD 2,056 million in the period 2013–2016 and USD 1,142 million in the period 2015–2016. The contributions increased by 24.8 per cent in the period 2015–2016 relative to 2013–2014 (since the BR2); its public financial support in

2015 and 2016 totalled USD 510.61 and 631.21 million per year, respectively. In those years, Spain provided more support for mitigation actions than for adaptation activities. The biggest share of financial support went to projects in the energy sector (renewable energy and reduction of energy losses from transmission lines), followed by the transport and the water and sanitation sectors. Spain reported information on technology transfer activities, providing a list of the main organizations participating in technology transfer and highlighting key examples. Among others, the following areas of technology development and transfer were covered: meteorology, renewable energy technologies, and development of sustainable energy systems. In particular, Spain highlighted the REGATTA project, implemented by UNEP and supported mainly by Spain, which aims to share knowledge on climate change technologies and experience in the Latin American and Caribbean region.

102. 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, namely to improve the transparency of its reporting by:<sup>7</sup>

(a) Providing updated information on its AEAs, taking into account, as relevant, the latest related European Commission decisions, within the description of its quantified economy-wide emission reduction target (see issue 1 in table 3);

(b) Organizing, to the extent appropriate, the reporting of mitigation actions by sector and by gas (see issue 1 in table 5);

(c) Including either an estimate of the mitigation impact of individual PaMs or a clear explanation of the reason such information could not be reported due to its national circumstances that applies to all PaMs for which such estimates were not provided (see issue 2 in table 5);

(d) Providing information on mitigation actions that have been adopted (but not yet implemented) or are in the planning stage since its last NC or BR submission to achieve its economy-wide emission reduction target (see issue 3 in table 5);

(e) Including information in CTF tables 4 and 4(a)II on the contribution of LULUCF activities towards the achievement of its 2020 target, and substantiating the reporting possibly with the use of notation keys or custom footnotes (see issue 1 in table 7);

(f) Including information in CTF table 4 on the contribution from market-based mechanisms towards the achievement of its 2020 target, substantiating the reporting possibly with the use of notation keys or custom footnotes (see issue 2 in table 7);

(g) Reporting GHG emissions for the year 1990 in the column “base year” of CTF table 6(a) and any related CTF tables (see issue 3 in table 11).

---

<sup>7</sup> The recommendations are given in full in the relevant sections of this report.

## Annex

### Documents and information used during the review

#### A. Reference documents

2017 GHG inventory submission of Spain. Available at

<https://unfccc.int/process/transparency-and-reporting/reporting-and-review-under-the-convention/greenhouse-gas-inventories-annex-i-parties/submissions/national-inventory-submissions-2017>.

2018 GHG inventory submission of Spain. Available at

<https://unfccc.int/process-and-meetings/transparency-and-reporting/reporting-and-review-under-the-convention/greenhouse-gas-inventories-annex-i-parties/national-inventory-submissions-2018>.

BR3 of Spain. Available at

[https://unfccc.int/files/national\\_reports/national\\_communications\\_and\\_biennial\\_reports/application/pdf/189024563\\_spain-br3-1-es\\_3br.pdf](https://unfccc.int/files/national_reports/national_communications_and_biennial_reports/application/pdf/189024563_spain-br3-1-es_3br.pdf).

BR3 CTF tables of Spain. Available at

<https://unfccc.int/process-and-meetings/transparency-and-reporting/reporting-and-review-under-the-convention/national-communications-and-biennial-reports-annex-i-parties/third-biennial-reports-annex-i>.

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

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

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

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

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

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

NC7 of Spain. Available at

[http://unfccc.int/files/national\\_reports/annex\\_i\\_natcom/\\_application/pdf/68037591\\_spain-nc7-1-7cn.pdf](http://unfccc.int/files/national_reports/annex_i_natcom/_application/pdf/68037591_spain-nc7-1-7cn.pdf).

Annexes to the NC7 of Spain. Available at

[http://unfccc.int/files/national\\_reports/annex\\_i\\_natcom/\\_application/pdf/68037591\\_spain-nc7-1-anexos\\_de\\_la\\_7cn.pdf](http://unfccc.int/files/national_reports/annex_i_natcom/_application/pdf/68037591_spain-nc7-1-anexos_de_la_7cn.pdf).

Report on the individual review of the annual submission of Spain submitted in 2016.

FCCC/ARR/2016/ESP. Available at

<https://unfccc.int/sites/default/files/resource/docs/2017/arr/esp.pdf>.

Report of the technical review of the second biennial report of Spain. FCCC/TRR.2/ESP.

Available at <https://unfccc.int/sites/default/files/resource/docs/2016/trr/esp.pdf>.

Report of the technical review of the sixth national communication of Spain.

FCCC/IDR.6/ESP. Available at

<https://unfccc.int/sites/default/files/resource/docs/2014/idr/esp06.pdf>.

“UNFCCC biennial reporting guidelines for developed country Parties”. Annex I to

decision 2/CP.17. Available at <http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf>.

## B. Additional information provided by the Party

Responses to questions during the review were received from Ms. Elisa de Santos (MAPAMA), including additional material. The following documents<sup>1</sup> were provided by Spain:

Ministerio de Agricultura y Pesca, Alimentación y Medio Ambiente. 2017. *Proyecciones de emisiones de gases a la atmósfera. Edición 2015–2050. Sumario de resultados.* (Projection of gases emissions. 2015–2050 edition. Summary of results.) Available at [http://www.mapama.gob.es/es/calidad-y-evaluacion-ambiental/temas/sistema-espanol-de-inventario-sei-espana-2017-proyecciones-informeresumen-corregido-junio2017\\_tcm30-378888.pdf](http://www.mapama.gob.es/es/calidad-y-evaluacion-ambiental/temas/sistema-espanol-de-inventario-sei-espana-2017-proyecciones-informeresumen-corregido-junio2017_tcm30-378888.pdf).

Estrategia a largo plazo para la rehabilitación energética en el sector de la edificación en España (ERESEE 2014) en cumplimiento de lo establecido por el artículo 4 de la Directiva 2012/27/UE, sobre Eficiencia Energética. (Long term strategy for the improvement of the energy efficiency in the existing building sector) Available at [https://www.fomento.gob.es/recursos\\_mfom/pdf/39711141-E3BB-49C4-A759-4F5C6B987766/130069/2014\\_article4\\_es\\_spain.pdf](https://www.fomento.gob.es/recursos_mfom/pdf/39711141-E3BB-49C4-A759-4F5C6B987766/130069/2014_article4_es_spain.pdf).

Spain's 2017 reporting on its projections under article 14 of the Monitoring Mechanism Regulation, including an executive summary of its projections. Available at [https://cdr.eionet.europa.eu/es/eu/mmr/art04-13-14\\_lcds\\_pams\\_projections/projections/](https://cdr.eionet.europa.eu/es/eu/mmr/art04-13-14_lcds_pams_projections/projections/) and [https://cdr.eionet.europa.eu/es/eu/mmr/art04-13-14\\_lcds\\_pams\\_projections/projections/envwmgbvw/SPAIN-2017-MMR-Projections-Art14\\_23IA-4-Executive\\_Summary\\_Projections-EN.pdf](https://cdr.eionet.europa.eu/es/eu/mmr/art04-13-14_lcds_pams_projections/projections/envwmgbvw/SPAIN-2017-MMR-Projections-Art14_23IA-4-Executive_Summary_Projections-EN.pdf).

Webpage of the Spanish ministry in charge of climate relative to the diffuse sector (including its definition and the emissions reductions target for this sector). Consulted on June, 2nd 2018. Available at <http://www.mapama.gob.es/es/cambio-climatico/temas/mitigacion-politicas-y-medidas/definicion-difusos.aspx>.

Hoja de Ruta de los sectores difusos a 2020 (2020 Road Map for Diffuse Sectors). MAPAMA, 2014. Available at [http://www.mapama.gob.es/es/cambio-climatico/temas/mitigacion-politicas-y-medidas/Hoja%20de%20Ruta%202020\\_tcm30-178253.pdf](http://www.mapama.gob.es/es/cambio-climatico/temas/mitigacion-politicas-y-medidas/Hoja%20de%20Ruta%202020_tcm30-178253.pdf) and its annex available at [http://www.mapama.gob.es/es/cambio-climatico/temas/mitigacion-politicas-y-medidas/HojaRuta2020\\_Fichas\\_tcm30-178314.pdf](http://www.mapama.gob.es/es/cambio-climatico/temas/mitigacion-politicas-y-medidas/HojaRuta2020_Fichas_tcm30-178314.pdf).

Spain National Energy Efficiency Action Plan 2017–2020. Available at [https://ec.europa.eu/energy/sites/ener/files/documents/es\\_neeap\\_2017\\_es.pdf](https://ec.europa.eu/energy/sites/ener/files/documents/es_neeap_2017_es.pdf).

Ministry in charge of the energy transition information about the Electricity Planning. Consulted on 4 June 4 2018. Available at <http://www.minetad.gob.es/energia/planificacion/Paginas/Index.aspx>.

V Plan Director de Cooperación Española 2018–2021 (Fifth Master Plan for Spanish Cooperation 2018–2021). Available at <http://www.exteriores.gob.es/Portal/es/SalaDePrensa/ElMinisterioInforma/Documents/V%20Plan%20Director%20de%20la%20Cooperacio%CC%81n%20Espan%CC%83ola.pdf>.

---

<sup>1</sup> Reproduced as received from the Party.