



**Report of the technical review of the sixth national communication  
of Malta**

**Note by the secretariat**

The report of the technical review of the sixth national communication of Malta was published on 19 December 2014. For purposes of rule 10, paragraph 2, of the rules of procedure of the Compliance Committee (annex to decision 4/CMP.2, as amended by decisions 4/CMP.4 and 8/CMP.9), the report is considered received by the secretariat on the same date. This report, FCCC/IDR.6/MLT, contained in the annex to this note, is being forwarded to the Compliance Committee in accordance with section VI, paragraph 3, of the annex to decision 27/CMP.1.



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## Report of the technical review of the sixth national communication of Malta

Parties included in Annex I to the Convention are requested, in accordance with decision 9/CP.16, to submit a sixth national communication to the secretariat by 1 January 2014. In accordance with decision 7/CMP.8, Parties included in Annex I to the Convention that are also Parties to the Kyoto Protocol shall include in their sixth national communication supplementary information under Article 7, paragraph 2, of the Kyoto Protocol. In accordance with decision 15/CMP.1, these Parties shall start reporting the information under Article 7, paragraph 1, of the Kyoto Protocol with the inventory submission due under the Convention for the first year of the commitment period. This includes supplementary information on the minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol.

This report presents the results of the technical review of the sixth national communication and supplementary information under the Kyoto Protocol of Malta conducted by an expert review team in accordance with the “Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention” and the “Guidelines for review under Article 8 of the Kyoto Protocol”.

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## I. Introduction and summary

### A. Introduction

1. For Malta the Convention entered into force on 15 June 1994 and by decision 3/CP.15 Malta became a Party included in Annex I to the Convention (Annex I Party) on 26 October 2010. Under the Convention, Malta made a commitment to contribute to the joint European Union (EU) economy-wide emission reduction target of 20 per cent of greenhouse gas (GHG) emissions by 2020 compared with the 1990 level. For Malta the Kyoto Protocol entered into force on 16 February 2005. For the first commitment period of the Kyoto Protocol, from 2008 to 2012, Malta did not have an emission reduction target. For the second commitment period of the Kyoto Protocol, from 2013 to 2020, Malta committed to contributing to the joint EU<sup>1</sup> commitment to reduce GHG emissions by 20 per cent compared with the base year<sup>2</sup> level.

2. This report covers the centralized technical review of the sixth national communication (NC6) of Malta, coordinated 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” (decision 23/CP.19) and the “Guidelines for review under Article 8 of the Kyoto Protocol” (decision 22/CMP.1). The NC6 referred to throughout this report covers the third, fourth, fifth and sixth national communications of Malta, because, as the Party noted, its NC6 is a consolidated document of all these communications.

3. The review took place from 5 to 10 May 2014 in Bonn, Germany, and was conducted by the following team of nominated experts from the UNFCCC roster of experts: Mr. Hamid Al Sadoon (Saudi Arabia), Mr. Kennedy Amankwa (Ghana), Mr. Fernando Farias (Chile), Ms. Violeta Hristova (Bulgaria), Mr. Hans Halvorson Kolshus (Norway), Ms. Asia Mohamed (Sudan), Mr. Rostislav Neveceral (Czech Republic), Mr. Asger Strange Olesen (Denmark), Ms. Natalya Parasyuk (Ukraine), Mr. Marcelo Rocha (Brazil), Ms. Lilia Taranu (Republic of Moldova) and Mr. Harry Vreuls (Netherlands). Mr. Amankwa and Mr. Vreuls were the lead reviewers. The review was coordinated by Ms. Xuehong Wang and Ms. Suvi Monni (secretariat).

4. During the review, the expert review team (ERT) reviewed each section of the NC6. The ERT also reviewed the supplementary information provided by Malta as a part of the NC6 in accordance with Article 7, paragraph 2, of the Kyoto Protocol. Malta became an Annex I Party on 26 October 2010 (as the term is defined under Article 1, paragraph 7, of the Kyoto Protocol), and did not have an emission reduction target for the first commitment period of the Kyoto Protocol. Therefore, the ERT considers that Malta is not required to report in its NC6 on supplementary information in accordance with Article 7, paragraph 2, of the Kyoto Protocol that is related to the commitment under Article 3, paragraph 1, of the

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<sup>1</sup> Please note that the target under the Convention is taken by the EU and its 28 member States, while the target under the Kyoto Protocol for its second commitment period applies to the EU-28 member States and Iceland. A political statement on the fulfilment of the target under the Kyoto Protocol for the second commitment period by the EU-28 jointly with Iceland is contained in the document FCCC/KP/CMP/2012/13, paragraph 45.

<sup>2</sup> “Base year” refers to the base year of the joint EU target for the second commitment period under the Kyoto Protocol, which is 1990 for all gases except nitrogen trifluoride, for which the base year has not yet been determined.

Kyoto Protocol. However, the ERT considers that Malta is required to report on the elements of supplementary information that are reflected in table 1 below. Nevertheless, in the NC6 and during the review, the Party reported some relevant information on reporting elements under Article 7, paragraph 2, of the Kyoto Protocol, which are related to the commitment under Article 3, paragraph 1, of the Kyoto Protocol, and that information is included in this report. The related recommendations are given considering that in the next national communication (NC), Malta will be expected to report fully the information required under Article 7, paragraph 2, of the Kyoto Protocol.

5. In accordance with decisions 23/CP.19 and 22/CMP.1, a draft version of this report was communicated to the Government of Malta, which provided comments that were considered and incorporated, as appropriate, into this final version of the report.

## **B. Summary**

6. The ERT conducted a technical review of the information reported in the NC6 of Malta in accordance with the “Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications” (hereinafter referred to as the UNFCCC reporting guidelines on NCs). As required by decision 15/CMP.1, supplementary information required under Article 7, paragraph 2, of the Kyoto Protocol<sup>3</sup> is provided in the NC6 (see para. 4 above and para. 121 below).

7. As the NC6 was the first NC submitted by Malta as an Annex I Party, this report does not include a comparison with the previous NC or a review of whether previous recommendations were considered by the Party. During the review, Malta provided further relevant information; for example, on actions taken to ensure the timeliness of the next NC; national circumstances; policies and measures (PaMs); systematic observation activities; and the Party’s preparations for the complete reporting of Kyoto Protocol elements in its next NC.

### **1. Completeness and transparency of reporting**

8. Gaps and issues related to the reported information identified by the ERT are presented in table 1 below.

### **2. Timeliness**

9. The NC6 was submitted on 9 April 2014, after the deadline of 1 January 2014 mandated by decision 9/CP.16. Malta informed the secretariat about its difficulties with the timeliness of its NC6 on 24 February 2014, which was not within the time frame set in paragraph 79 of the annex to decision 23/CP.19 and paragraph 139 of the annex to decision 22/CMP.1. As the NC6 was not submitted within six weeks after the due date (15 February 2014), the delay was brought to the attention of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP) and the Compliance Committee and made public. The ERT noted with great concern the delay in the submission of the NC6.

10. During the review, Malta informed the ERT that it will undertake an assessment of the approach taken for the preparation of the NC6 and the first biennial report in order to establish appropriate arrangements to ensure timely reporting in the future. This assessment will take into account, inter alia: the best use of the limited human and financial resources available; the outcome of the review process; and the use of information prepared to fulfil

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<sup>3</sup> Decision 15/CMP.1, annex, chapter II.

other climate change reporting requirements, including those arising from EU legislation. The ERT welcomed the plan, acknowledging that this was the first NC submission of Malta as an Annex I Party, and recommends that Malta submit its next NC on time.

**3. Adherence to the reporting guidelines**

11. The information reported by Malta in its NC6 is mostly in adherence with the UNFCCC reporting guidelines on NCs as per decision 4/CP.5 (see table 1).

Table 1  
**Assessment of completeness and transparency issues of reported information in the sixth national communication of Malta<sup>a</sup>**

<i>Sections of national communication</i>	<i>Completeness</i>	<i>Transparency</i>	<i>Reference to paragraphs</i>	<i>Supplementary information under the Kyoto Protocol<sup>b</sup></i>	<i>Completeness</i>	<i>Transparency</i>	<i>Reference to paragraphs</i>
Executive summary	Complete	Transparent					
National circumstances	Complete	Partially transparent	13				
Greenhouse gas inventory	Mostly complete	Transparent	16				
Policies and measures (PaMs)	Mostly complete	Mostly transparent	30, 31, 63	PaMs in accordance with Article 2	Mostly complete	Transparent	75, 76
Projections and total effect of PaMs	Mostly complete	Transparent	80, 93, 94	Domestic and regional programmes and/or arrangements and procedures	Mostly complete	Transparent	24
Vulnerability assessment, climate change impacts and adaptation measures	Complete	Transparent		Information under Article 10 <sup>c</sup>	NA	NA	
Financial resources and transfer of technology <sup>d</sup>	NA	NA		Financial resources <sup>d</sup>	NA	NA	
Research and systematic observation	Partially complete	Mostly transparent	106–108				
Education, training and public awareness	Complete	Transparent					

*Abbreviation:* NA = not applicable.

<sup>a</sup> A list of recommendations pertaining to the completeness and transparency issues identified in this table is included in the chapter on conclusions and recommendations.

<sup>b</sup> The table reflects only those reporting elements of supplementary information under the Kyoto Protocol that the ERT considers Malta was required to report on in the NC6, taking into account its recent change of status to an Annex I Party (see para. 4 above).

<sup>c</sup> For the purposes of reporting in table 1 this assessment refers to information provided by the Party on the provisions contained in Article 4, paragraphs 3, 5 and 7, of the Convention reported under Article 10 of the Kyoto Protocol, which is relevant for developed country Parties and other developed Parties included in Annex II to the Convention only. Assessment of the information provided by the Party on the other provisions of Article 10 of the Kyoto Protocol is provided under the relevant substantive headings under the Convention, for example research and systematic observation.

<sup>d</sup> Reporting on financial resources under the Kyoto Protocol is relevant for developed country Parties and other developed Parties that are included in Annex II to the Convention (Annex II Parties). As Malta is not an Annex II Party, it does not have an obligation to provide information on financial resources under Article 11 of the Kyoto Protocol, including on “new and additional” resources.

## II. Technical review of the reported information in the national communication and supplementary information under the Kyoto Protocol

### A. Information on greenhouse gas emissions and national circumstances relevant to greenhouse gas emissions and removals, including other elements related to the Kyoto Protocol

#### 1. Information on relevant national circumstances

12. In its NC6, Malta has provided a concise description of the national circumstances and briefly elaborated on the framework legislation and key policy documents on climate change. Further information on the review of the institutional and legislative arrangements for the coordination and implementation of PaMs is provided in chapter II.B below.

13. In its NC6, Malta has provided information on the government structure, population, geography, climate, economy and relevant economic sectors. However, the ERT noted that, while the national circumstances are briefly described in the NC6, Malta did not provide transparent information on how these national circumstances and changes therein affect its GHG emissions and removals. During the review, Malta provided additional information, including larger meteorological and economy-related data sets, and information that facilitated the ERT's understanding of the relevance of economic sectors (e.g. energy, transport, waste, agriculture) in terms of vulnerability and mitigation opportunities for Malta. The ERT recommends that Malta improve the transparency of reporting in its next NC by including information on how these national circumstances and changes therein affect GHG emissions and removals in Malta over time.

14. The ERT noted that during the period 1990–2011, Malta's GHG emissions increased steadily, with a maximum reached in 2007 (before the global financial and economic crisis) and with a minimum reached in 2009. Since 2009, GHG emissions have resumed an increasing trend but at a slower pace than that seen before 2007. In 2011, Malta's gross domestic product (GDP) (2005 USD billion using purchasing power parity) was double that in 1990, while GHG emissions excluding land use, land-use change and forestry (LULUCF) increased by 50.6 per cent during the period 1990–2011. In other words, GHG emissions per GDP decreased by 24.4 per cent during the same period, representing a decrease in the carbon intensity of the economy.

15. The ERT also noted that during the period 1990–2011 the population increased by 20.0 per cent, while GHG emissions per capita increased by 27.2 per cent. Table 2 illustrates the national circumstances of Malta by providing some indicators relevant to GHG emissions and removals.

Table 2  
Indicators relevant to greenhouse gas emissions and removals for Malta

	1990	2010	2011	Change 1990– 2011 (%)	Change 2010– 2011 (%)
Population (million)	0.35	0.42	0.42	20.0	0.0
GDP (2005 USD billion using PPP)	4.84	9.44	9.64	99.2	2.1
TPES (Mtoe)	0.70	0.85	0.86	22.9	1.2



	1990	2010	2011	Change 1990– 2011 (%)	Change 2010– 2011 (%)
GHG emissions without LULUCF (kt CO <sub>2</sub> eq)	2 006.56	2 997.92	3 021.19	50.6	0.8
GHG emissions with LULUCF (kt CO <sub>2</sub> eq)	1 950.02	2 938.24	2 961.52	51.9	0.8
GDP per capita (2005 USD thousand using PPP)	13.68	22.70	23.01	68.2	1.4
TPES per capita (toe)	1.96	2.04	2.05	4.6	0.5
GHG emissions per capita (t CO <sub>2</sub> eq)	5.67	7.21	7.21	27.2	0.0
GHG emissions per GDP unit (kg CO <sub>2</sub> eq per 2005 USD using PPP)	0.41	0.32	0.31	–24.4	–3.1

*Sources:* (1) GHG emissions data: Malta's 2013 GHG inventory submission, version 1.3; (2) Population, GDP and TPES data: International Energy Agency.

*Note:* The ratios per capita and per GDP unit are calculated relative to GHG emissions without LULUCF; the ratios are calculated using the exact (not rounded) values and may therefore differ from a ratio calculated with the rounded numbers provided in the table.

*Abbreviations:* GDP = gross domestic product, GHG = greenhouse gas, LULUCF = land use, land-use change and forestry, PPP = purchasing power parity, TPES = total primary energy supply.

## 2. Information on the greenhouse gas inventory, emissions and trends

16. Malta has provided a summary of information on GHG emission trends for the period 1990–2011. This information is fully consistent with the 2013 national GHG inventory submission. Summary tables, including trend tables for emissions in carbon dioxide equivalent (CO<sub>2</sub> eq) (given in the common reporting format (CRF) tables), are not provided in the NC6. The ERT recommends that Malta provide a summary of the GHG emissions inventory, including emission trend tables in CO<sub>2</sub> eq (in the CRF tables), in its next NC. During the review, the ERT took note of the recently submitted 2014 annual submission, in which Malta reported 3,140.15 kt CO<sub>2</sub> eq for the national total GHG emissions excluding LULUCF for the year 2012.

17. Total GHG emissions<sup>4</sup> excluding LULUCF increased by 50.6 per cent between 1990 and 2011, whereas total GHG emissions including net emissions or removals from LULUCF increased by 51.9 per cent over the same period. This trend was owing to increased emissions from energy industries and transport. In its NC6, Malta reported that two distinct emission trends can be observed: a clear growth in emissions for the years 1990 to 2007 (without LULUCF, this represents an increase of 54.8 per cent between 1990 and 2007) and a relatively flat trend (decrease of 2.7 per cent) between 2007 and 2011. An explanation for these different trends was not provided by Malta; therefore, the ERT encourages Malta to provide an explanation for the trends observed in its next NC. Between 1990 and 2011, carbon dioxide (CO<sub>2</sub>) emissions increased by 42.8 per cent, mainly owing to increased fuel combustion activities. Methane (CH<sub>4</sub>) emissions increased by 83.7 per cent, owing to increased emissions from solid waste disposal on land, while nitrous oxide (N<sub>2</sub>O) emissions increased by 1.0 per cent. The emissions of hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs) were not reported for 1990, whereas sulphur hexafluoride

<sup>4</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.

(SF<sub>6</sub>) emissions were 0.01 kt CO<sub>2</sub> eq in 1990 and increased to 4.81 kt CO<sub>2</sub> eq in 2011. An analysis of the drivers of GHG emission trends in each sector is provided in chapter II.B below. Table 3 provides an overview of GHG emissions by sector from 1990 to 2011.

Table 3  
**Greenhouse gas emissions by sector in Malta, 1990–2011**

Sector	GHG emissions (kt CO <sub>2</sub> eq)				Change (%)		Share <sup>a</sup> by sector (%)	
	1990	2000	2010	2011	1990–2011	2010–2011	1990	2011
	1. Energy	1 878.10	2 360.56	2 659.62	2 681.65	42.8	0.8	93.6
A1. Energy industries	1 372.62	1 693.30	1 893.28	1 937.73	41.2	2.3	68.4	64.1
A2. Manufacturing industries and construction	59.46	57.52	46.19	73.00	22.8	58.1	3.0	2.4
A3. Transport	349.50	504.00	596.24	565.75	61.9	–5.1	17.4	18.7
A4.–A5. Other	96.52	105.74	123.91	105.17	9.0	–15.1	4.8	3.5
B. Fugitive emissions	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA	NA	NA	NA
2. Industrial processes	0.33	10.11	130.24	140.57	42 747.9	7.9	0.0	4.7
3. Solvent and other product use	2.48	3.01	1.29	1.31	–47.3	1.6	0.1	0.0
4. Agriculture	87.81	102.95	78.04	70.90	–19.3	–9.2	4.4	2.3
5. LULUCF	–56.54	–55.91	–59.67	–59.67	5.5	0.0	–2.8	–2.0
6. Waste	37.84	64.40	128.73	126.76	235.0	–1.5	1.9	4.2
<b>GHG total with LULUCF</b>	<b>1 950.02</b>	<b>2 485.12</b>	<b>2 938.24</b>	<b>2 961.52</b>	<b>51.9</b>	<b>0.8</b>	<b>NA</b>	<b>NA</b>
<b>GHG total without LULUCF</b>	<b>2 006.56</b>	<b>2 541.03</b>	<b>2 997.92</b>	<b>3 021.19</b>	<b>50.6</b>	<b>0.8</b>	<b>100.0</b>	<b>100.0</b>

Source: Malta's 2013 GHG inventory submission, version 1.3 (for GHG emission data).

Note: The changes in emissions and the shares by sector are calculated using the exact (not rounded) values and may therefore differ from values calculated with the rounded numbers provided in the table.

Abbreviations: GHG = greenhouse gas, LULUCF = land use, land-use change and forestry, NA = not applicable, NE = not estimated, NO = not occurring.

<sup>a</sup> The shares of sectors are calculated relative to GHG emissions without LULUCF; for the LULUCF sector, the negative values indicate the share of GHG emissions that was offset by GHG removals through LULUCF.

### 3. National system

18. Malta became an Annex I Party on 26 October 2010, and did not have an emission reduction target for the first commitment period of the Kyoto Protocol. Malta reported in its NC6 that it does not yet have a national GHG inventory system in operation, and that its Ministry for Sustainable Development, the Environment and Climate Change is assessing the legal and administrative requirements to establish such an inventory system to perform the general and specific functions defined in the guidelines for national systems under Article 5, paragraph 1, of the Kyoto Protocol (decision 19/CMP.1).

19. During the review, Malta confirmed that it is preparing a national system and that it should be able to report the required information on its national system in its next NC. The ERT recommends that Malta adhere to this plan.

#### 4. National registry

20. Malta reported in its NC6 that, as it did not have a quantified emission limitation or reduction target under the first commitment period of the Kyoto Protocol (see para.18 above), it has not been required to establish a national registry in accordance with the annex to decision 13/CMP.1 and the annex to decision 5/CMP.1. Malta reported that pursuant to its obligation to implement EU legislation, it has a registry system connected to the European Union Transaction Log but not directly connected to the international transaction log. Malta also reported in its NC6 that, due to the inclusion of Malta in the list of Parties with a quantified emission limitation or reduction target under the second commitment period of the Kyoto Protocol, it will in the near future establish a registry for Kyoto Protocol accounting.

21. The ERT recommends that Malta report on all required elements of its national registry in accordance with annex to decision 15/CMP.1 in its next NC.

#### 5. Domestic and regional programmes and/or legislative arrangements and procedures related to the Kyoto Protocol

22. Malta has reported in its NC6 information on domestic and regional programmes and/or legislative arrangements and procedures related to the joint target of the EU and its member States for the second commitment period of the Kyoto Protocol; namely, on the European Union Emissions Trading System (EU ETS), the EU effort-sharing decision (ESD) and related national measures.

23. The overall responsibility for climate change policymaking lies within the Ministry for Sustainable Development, the Environment and Climate Change of Malta. Several other ministries, such as the Ministry for Transport and Infrastructure, the Ministry for Energy and Health and the Ministry for Finance, are responsible for policies contributing to climate change mitigation and adaptation in their areas of competence. A number of national institutions are involved in the implementation of the climate policy. In 2013, an Inter-Ministerial Committee on Climate Change was established, involving the relevant ministries with responsibilities pertaining to climate change.

24. In its NC6, Malta did not report on any provisions to make publicly accessible the information on legislative arrangements and enforcement and administrative procedures established pursuant to the implementation of the Kyoto Protocol. During the review, Malta informed the ERT that all national legislation is publicly available, and the Party provided links to the website of the Ministry for Justice, Culture and Local Government, concerning legislation related to the EU ETS. Malta explained that the relevant legislative instruments provide the necessary legal basis for enforcement and administrative procedures, and include provisions related to public access to information. The ERT recommends that in its next NC Malta describe any provisions to make publicly accessible the information on legislative arrangements and enforcement and administrative procedures established pursuant to the implementation of the Kyoto Protocol.

25. For the reasons stated in paragraph 18, Malta was not required to provide information on: (i) activities relating to participation in the mechanisms pursuant to Articles 6, 12 and 17, of the Kyoto Protocol; and (ii) activities under Article 3, paragraph 3, and any elected activities under Article 3, paragraph 4, of the Kyoto Protocol. However, in its NC6 and during the review, Malta provided some relevant information, which is indicated in paragraphs 26 and 27 below.

26. In its NC6, Malta provides information on its potential future use of Kyoto Protocol mechanisms in the context of the second commitment period of the Kyoto Protocol. During the review, Malta provided additional information on this issue and clarified that future participation in Kyoto Protocol mechanisms is subject to the outcome of negotiations at the

international level. The ERT recommends that, in its next NC, Malta describe any institutional arrangements and decision-making procedures that it has in place to coordinate activities relating to participation in the mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol, including the participation of legal entities.

27. In its NC6, Malta did not provide a description of national legislative arrangements and administrative procedures in place in relation to Article 3, paragraphs 3 and 4, of the Kyoto Protocol. During the review, Malta confirmed that the Party is currently at an early stage of developing the relevant systems to meet requirements under Article 3, paragraphs 3 and 4, of the Kyoto Protocol in the context of the second commitment period. Malta further provided information explaining that, owing to obligations under the recent EU decision on LULUCF (decision 529/2013/EU), Malta foresees substantial changes to its reporting on this sector. The ERT recommends that, in its next NC, Malta include information on any national legislative arrangements and administrative procedures regarding activities under Article 3, paragraph 3, and any elected activities under Article 3, paragraph 4, of the Kyoto Protocol and how these arrangements and procedures seek to ensure that the implementation of activities under Article 3, paragraph 3, and any elected activities under Article 3, paragraph 4, of the Kyoto Protocol also contribute to the conservation of biodiversity and the sustainable use of natural resources.

## **B. Policies and measures, including those in accordance with Article 2 of the Kyoto Protocol**

28. Malta has provided in its NC6 well-organized information on its package of PaMs implemented, adopted and planned in order to fulfil its commitments under the Convention and for the second commitment period under the Kyoto Protocol.

### **1. Policies and measures related to implementation of commitments under the Convention**

29. In its NC6, Malta reported on its PaMs adopted, implemented and planned in achieving its commitments under the Convention and its Kyoto Protocol. Malta provided information on PaMs by sector and by gas and a description of the principal PaMs.

30. The description of PaMs in section 3.4 of the NC6 does not, however, include some of the information required by the UNFCCC reporting guidelines on NCs. In presenting each policy or measure, information on objectives and implementing entities is not consistently provided, although this information can be found in the common tabular format (CTF) tables submitted in conjunction with the NC6. During the review, Malta brought to the attention of the ERT the 2013 submission of Malta under Article 3, paragraph 2 of the EU monitoring mechanism (decision 280/2004/EC); the ERT found this source of information to be comprehensive and relevant. The ERT recommends that Malta report in its next NC information on the objectives and implementing entities of PaMs by integrating the information directly into the descriptions of the PaMs and by extending tables 3-1 to 3-6 of the NC6 with additional columns in line with table 1 referred to in paragraph 17 of the UNFCCC reporting guidelines on NCs.

31. Malta reported a quantified mitigation impact for each policy and measure by 2020 and 2030. However, the ERT considers that information on how Malta believes its PaMs are modifying longer-term trends in anthropogenic GHG emissions and removals consistent with the objective of the Convention is not provided explicitly in the NC6 as required by the UNFCCC reporting guidelines on NCs. During the review, Malta provided additional information on this matter, elaborating on the longer-term impacts of PaMs for electricity generation and transport. Malta also stated that it recognizes the need for additional actions

in the future to counteract increases in emissions as a result of changes in consumption patterns, especially under a stricter regulatory framework at the international, European and national levels. This information provided by Malta increased the completeness of the reporting. The ERT recommends that Malta provide in its next NC information on how it believes its PaMs are modifying longer-term trends in anthropogenic GHG emissions and removals in accordance with the objective of the Convention.

32. The ERT considers that the reporting by Malta lacked transparency regarding whether the reported PaMs represent all principal PaMs or a subset thereof. During the review, Malta informed the ERT that all implemented, adopted and planned PaMs are included in the NC6.

33. The ERT also considers that there is a lack of transparency regarding how the mitigation impacts of PaMs are calculated and encourages Malta to elaborate on this issue in its next NC.

34. While the ERT appreciates that the NC6 includes a generic description of the policymaking process, further information on this matter would greatly enhance the transparency of the Party's reporting. During the review, Malta provided information on the role of the Inter-Ministerial Committee on Climate Change referred to in paragraph 23 above. The ERT encourages Malta to elaborate more on the policymaking process in its next NC, in particular by specifying the decision-making and policy development processes, including brief explanations on the role of, where relevant, parliamentary committees, coordination committees at ministerial level, public hearings and so on.

35. The NC6 does not include information required by the UNFCCC reporting guidelines on NCs on the institutional arrangements and processes for monitoring and evaluating PaMs. During the review, Malta confirmed that no formal systematic process is in place, but that the national GHG mitigation strategy foresees the development of such a process. The ERT encourages Malta to include any relevant information on status and plans regarding monitoring and evaluation of PaMs in its next NC, as well as, if possible, any ad hoc activities undertaken in the meantime.

36. In addition, the NC6 does not include information on the costs of individual PaMs. During the review, Malta provided additional information by referring to the 2013 submission of Malta under Article 3, paragraph 2 of the EU monitoring mechanism (decision 280/2004/EC). This source of information was found to be concise and comprehensive, covering several reporting elements not included in the NC6, including the costs of PaMs. The ERT encourages Malta to make clear reference to such already available and publicly accessible information, or to include cost information directly in the PaMs section of its next NC.

37. The ERT further noted that Malta did not provide transparent information on policies and practices that encourage activities that lead to greater levels of GHG emissions. However, two measures were indicated in the NC6 as having a negative mitigation impact – a waste-to-energy facility (see para. 72 below) and uptake of electric cars – which Malta confirmed during the review. The ERT encourages Malta to include in its next NC information on policies and practices that encourage activities that lead to greater levels of GHG emissions, and to more transparently report on the rationale for such actions.

38. During the review, Malta provided additional information on PaMs concerning sea and air transport. This information enhanced the transparency and completeness of the reporting on the transport sector in Malta. The ERT encourages Malta to provide such information in its next NC.

## 2. Policy framework and cross-sectoral measures

39. The overall framework strategy guiding sustainable development in Malta, including reduction of GHG emissions, is the Sustainable Development Strategy for the Maltese Islands, adopted in 2006. In addition, the National Environment Policy (2012) includes reduction of GHG emissions as an important national environmental policy objective.

40. The key framework and legal basis for climate and energy policy is included in the National Energy Policy (2012), the principles of which are presented briefly in the NC6 section on energy. The PaMs reported as being implemented under the National Energy Policy are expected to deliver the vast majority of the projected economy-wide emission reductions by 2020. No other national sectoral or cross-sectoral framework policy is reported in the NC6.

41. According to information reported in the NC6, approximately 65 per cent of Malta's total GHG emissions in 2011 came from installations included in the EU ETS, and a large share of projected reductions in the 'with measures' scenario (figure 4-5 in the NC6) is to be achieved by Malta's EU ETS installations (specifically the two electricity generation plants operated by Enemalta). Therefore, the ERT noted that the EU ETS can be considered to be the key instrument for GHG mitigation in Malta. The ERT also noted that many of the reported PaMs have potential synergies or overlaps with other PaMs, in particular as both energy generation- and demand-side measures are in place or have been adopted. In the sectors not covered by the EU ETS, the largest emission reductions are expected to be achieved in the transport sector and the industrial processes sector. Malta reported that many of the PaMs in sectors not covered by the EU ETS are driven by EU legislation.

42. While Malta provided comprehensive information on PaMs at the national level, very little information was given in the NC6 on subnational PaMs. During the review, Malta clarified that no PaMs are deferred to the regional or local level, as subnational levels are limited to local councils with limited jurisdiction. However, local councils are involved in policy implementation (e.g. waste management). The ERT encourages Malta to clarify the levels and roles of administration in the context of its climate policy in its next NC.

43. Table 4 provides a summary of the reported information on the PaMs of Malta.

Table 4

### Summary of information on policies and measures reported by Malta

<i>Sectors affected</i>	<i>List of key policies and measures</i>	<i>Estimate of mitigation impact (kt CO<sub>2</sub> eq)</i>
<b><i>Policy framework and cross-sectoral measures</i></b>	European Union Emissions Trading System and European Union effort-sharing decision	NR
<b><i>Energy</i></b>	National Energy Policy	NR
Energy supply	Changes in plant loading of oil-fired Marsa power station (for 2008–2015) and complete shutdown of the station thereafter, to comply with the derogation under the European Union directive on large combustion plants (2001/80/EC); consequent installation of new capacity and a connection to the Italian electricity grid	1 152
	Conversion of oil-fired electricity generation plants in Delimara power station to natural gas and the installation of new natural gas-fired generation capacity (2018)	1 527

<i>Sectors affected</i>	<i>List of key policies and measures</i>	<i>Estimate of mitigation impact (kt CO<sub>2</sub> eq)</i>
Renewable energy	Promotion of on-shore wind farms through the development of guidelines and the provision of grants	17
	Promotion of off-shore wind farms	99
	Incentives for the uptake of photovoltaic systems through grants and a feed-in tariff	21
Energy efficiency	Energy-saving measures in the government-owned Water Services Corporation	19
	Support for energy efficiency in industry and small and medium-sized enterprises	13
Residential and commercial sectors	Intelligent metering	11
	Promotion of solar water heaters	8
<b>Transport</b>	Biofuel substitution obligation	54
	Promotion of transport modal shift through public transport reform	40
<b>Industrial sectors</b>	Implementation of the European Union regulation on fluorinated gases	128
<b>Agriculture</b>	Nitrates Action Programme	33
<b>Forestry</b>	Afforestation	7
<b>Waste management</b>	Management of closed and operational landfills	34
	New mechanical–biological treatment plants	16

*Source:* Malta's sixth national communication and first biennial report.

*Note:* The mitigation impact estimates given for some measures are avoided emissions in carbon dioxide equivalent for 2020.

*Abbreviation:* NR = not reported.

### 3. Policies and measures in the energy sector

44. Between 1990 and 2011, GHG emissions from the energy sector increased by 42.8 per cent (803.55 kt CO<sub>2</sub> eq), mainly owing to increases in emissions from the energy industries and transport sectors.

45. The NC6 includes 15 energy sector PaMs, all of which are described in table 3-1 of the NC6 by name, type of instrument, GHGs affected, status and estimates of mitigation impact by 2020 and 2030.

46. The ERT noted that some of the expected mitigation impacts in the energy sector are attributed to Malta's two installations under the EU ETS (see para. 41 above and para. 95 below).

47. **Energy supply.** Electricity is generated in Malta in two oil-fired power stations, Marsa and Delimara. In order to comply with the derogation under the EU directive on large combustion plants (2001/80/EC), the plant loading of heavy fuel oil fired Marsa power station has been reduced since 2008. Consequently, production in Delimara power station with new (2012) and more efficient gasoil plants has increased. By 2020, the oil-fired electricity generation plant in Marsa will be decommissioned and a connection to Sicily is to be installed, linking Malta to the Italian electricity grid. The decommissioning of Marsa power station is estimated to deliver GHG emission reductions of 1,152 kt CO<sub>2</sub> eq by 2020.

48. Electricity generation in Delimara power station is also planned to shift from oil to natural gas in the coming years. This shift is estimated to result in 1,527 kt CO<sub>2</sub> eq of avoided GHG emissions by 2020. The ERT considers that the planned shift from oil to gas will require substantial capital investment (e.g. in pipelines, generating capacity and harbour facilities), which could be difficult to source on the financial markets in the current economic climate. Given the anticipated substantial importance of this measure in terms of emission reductions, and in order to ensure transparent and realistic presentation of all measures, the ERT encourages Malta to provide more detail on the planned implementation, timeline and, if possible, financing of this measure in its next NC.

49. **Renewable energy sources.** Under the EU directive on renewable energy (directive 2009/28/EC) Malta is committed to reaching a 10 per cent share of renewable energy sources (RES) in gross final energy consumption by 2020. The target is considered to be the main driver of the introduction of renewable energy into the Maltese energy system.

50. Given the biophysical and climatic conditions of Malta, wind (both on-shore and off-shore) and solar energy are considered the predominant RES. A few stand-alone waste-to-energy projects have also been realized. The most important is the biogas installation (WasteServ Malta Ltd, a government-owned company) in operation at the Sant' Antnin solid waste treatment plant, which has a capacity of 1.74 MW.

51. In terms of instruments to promote RES, the Government has provided grants for investments, introduced feed-in tariffs and granted licences for plants. Guidelines for small and medium-sized wind turbines have been published.

52. Solar energy, both for electricity generation and for water heating in households and businesses, has developed strongly, resulting in substantial capacity in place in 2012, with annual production potential of 25 GWh for electricity and 31 GWh for water heating. The ERT acknowledges the importance of this achievement.

53. The uptake of wind energy has lagged behind that of solar energy for a variety of reasons. For small- and micro-scale turbines, uncertainty in energy yields, relatively high installation costs and planning and permitting issues have been identified as the main barriers to uptake. Three planned large-scale wind farms have been stalled because of environmental concerns. As their capacity would allow these installations to contribute three to four percentage points to the RES target, the ERT is of the view that their implementation would be of great importance and thus encourages Malta to follow up with more detailed information on this measure, and alternatives considered, in its next NC.

54. **Energy efficiency.** As stipulated in the National Energy Efficiency Action Plan under the EU energy services directive (2006/32/EC), Malta is aiming to achieve energy savings of 9.0 per cent by 2016. This is to be achieved in the residential and commercial and industrial sectors (see paras. 55 and 58 below), mainly through financial assistance and regulation, and with the public sector leading by example.

55. **Residential and commercial sectors.** Several energy efficiency instruments have been implemented for buildings in the residential and commercial sectors. A building regulations office has been established and grants and financial support are being offered for roof insulation, double glazing of windows and the purchase of energy-efficient household appliances. In addition, intelligent metering and solar water heaters have been promoted.

56. **Transport sector.** In terms of national total GHG emissions, road transport is second only to energy industries. Between 1990 and 2011, emissions from transport increased by 61.9 per cent (216.25 Gg CO<sub>2</sub> eq).

57. Malta reports that after some initial difficulties with the introduction of biofuel, a substitution obligation was adopted and a substitution target was set, which is foreseen to



increase biofuel uptake incrementally from 1.5 per cent in 2011 to 10 per cent in 2020. A number of other measures have also been identified, including the promotion of a modal shift in transport through public transport reform.

58. **Industrial sector.** Malta does not report separately on the industrial sector in its NC6, but several energy efficiency related PaMs concern this sector. A number of schemes have been launched to encourage investments in energy efficiency, supplemented by subsidized energy auditing. In total, GHG emission reductions of 13 kt CO<sub>2</sub> eq are expected from these measures by 2020. The ERT finds that the information given on measures in this sector is somewhat generic, and there is a lack of information on and quantification of individual measures. The ERT encourages Malta to provide more in-depth descriptions of individual PaMs its next NC.

#### 4. Policies and measures in other sectors

59. Between 1990 and 2011, GHG emissions from industrial processes (including solvent and other product use), agriculture and waste increased by 164.3 per cent (211.07 kt CO<sub>2</sub> eq), mainly owing to increased emissions from waste and industrial processes. Agricultural emissions decreased over the period.

60. **Industrial processes.** Between 1990 and 2011, GHG emissions from the industrial processes sector increased by 42,747.9 per cent (140.24 kt CO<sub>2</sub> eq). Since 2000 (the first year with all fluorinated gases (F-gases) reported), GHG emissions in the sector have increased 14-fold, mainly owing to a significant increase in emissions of HFCs. Sections 2.4.5 and 2.5.2 of the NC6 concisely present the main emission sources.

61. In the NC6, Malta has not provided an explanation for the significant increase in emissions in the industrial processes sector, in particular the increase in emissions of HFCs. During the review, Malta provided clarification that the increase in emissions of HFCs was related to increased installation of air-conditioning equipment in households and the substitution of older chlorofluorocarbon-containing refrigeration units. The ERT finds this information to enhance transparency and encourages Malta to include such information in its next NC.

62. Malta reports in the NC6 that implementation of the EU regulation on F-gases (regulation 2006/842/EC) will be the main driver of avoided emissions in the industrial processes sector. It is estimated that by 2020 measures in this sector will deliver GHG emission reductions of 128 kt CO<sub>2</sub> eq per year, equal to a 91.0 per cent reduction compared with 2011. Furthermore, by 2030, Malta estimates annual GHG emission reductions of 234 kt CO<sub>2</sub> eq. From section 4.2.2 and figure 4-3 in the NC6 it is understood that in the 'without measures' scenario, emissions are expected to more than double before 2030 compared with 2011. During the review, Malta informed the ERT that this scenario was to be considered a worst case scenario, and that emission reductions were calculated relative to this.

63. The ERT is of the view that the information on PaMs in the industrial processes sector is only partially transparent. The ERT recommends that Malta enhance the transparency of its reporting by providing in its next NC explicit information on drivers of trends in the sector and more detailed information on the implementation of the F-gases regulation. The ERT encourages Malta to clarify how the estimated GHG reductions have been quantified.

64. **Agriculture.** Between 1990 and 2011, GHG emissions from the agriculture sector decreased by 19.3 per cent (16.91 kt CO<sub>2</sub> eq). After an increase from 1990 to 2000, emissions from 2000 decreased by 31.1 per cent. All categories showed a decreasing trend, and the majority of the reductions were achieved in relation to animal husbandry activities. The ERT did not find an analysis of the drivers behind this decrease in chapters 2 or 3 of

the NC6. During the review, Malta clarified that the decrease is mainly linked to decreasing livestock numbers.

65. In the NC6, the Rural Development Programme (RDP) 2007–2013 (outlining the strategic plan for the utilization of the financing opportunities provided by the European Agricultural Fund for Rural Development) is briefly introduced, but the information provided on possible measures is given mainly at the EU level. During the review, Malta provided additional information, including the planned objectives and focus areas of the RDP for 2014–2020. Due to the early stage of its development, quantification of the effect of measures foreseen under the RDP was not provided. The ERT considers that by the time of the next NC submission, RDP measures should be fully developed and under implementation and therefore encourages Malta to include such information in its next NC.

66. The Nitrates Action Programme, pursuant to the EU nitrates directive (91/676/EEC), is identified as the main GHG emission reduction measure for the agriculture sector, and examples of activities under this programme are presented in the NC6. It is estimated that by 2020 annual GHG emission reductions equal to 33 kt CO<sub>2</sub> eq will be achieved. The ERT did not find in the NC6 information on how these reductions have been calculated. In section 4.2.3 of the NC6 on agriculture sector projections, no information was presented on the ‘without measures’ scenario.

67. The ERT is of the view that the information on PaMs in the agriculture sector is only partially transparent because information on the drivers behind the emissions trend for animal husbandry activities, as well as information on how the effects of PaMs have been calculated, was not included. The ERT encourages Malta to enhance the transparency of its reporting by providing this information in its next NC.

68. **LULUCF.** The LULUCF sector contributed a net removal of 59.67 kt CO<sub>2</sub> eq in Malta in 2011 and net GHG removals have increased by 3.14 kt CO<sub>2</sub> eq (5.5 per cent) since 1990. The trend was mainly owing to enhanced removals from cropland.

69. Malta reports voluntary planting of trees since 2004 as a relevant measure in this sector. It is foreseen that tree planting on dedicated land will continue. Malta estimates that the effect of the measure will be GHG removals of 7 kt CO<sub>2</sub> eq by 2020.

70. The ERT noted that due to the biophysical and climatic circumstances of the country, the LULUCF sector is of minor importance in Malta. In this regard, the ERT finds the information on the LULUCF sector PaMs to be complete and transparent. The ERT welcomed the foreseen substantial methodological development for estimates of emissions and removals from this sector (see para. 27 above).

71. **Waste management.** Between 1990 and 2011, GHG emissions from the waste sector increased by 235.0 per cent (88.92 kt CO<sub>2</sub> eq), mainly owing to CH<sub>4</sub> emissions from two open landfills that have since been closed and replaced by managed landfills. Indeed, the NC6 provided information that substantial changes have occurred in the waste sector in recent years. For a variety of reasons not directly associated with GHG mitigation, numerous PaMs have been implemented, including the closure of open landfills.

72. A number of PaMs are explained in section 3.4.5 of the NC6, including the management of closed and operational landfills and the establishment of new mechanical–biological treatment plants. Quantification of the effect of the PaMs is provided in table 3-6 of the NC6. The waste sector PaMs are estimated to deliver total annual GHG emission reductions of 58 kt CO<sub>2</sub> eq by 2020, but at the same time one measure (waste-to-energy) is expected to lead to an increase in emissions of 70 kt CO<sub>2</sub> eq by 2020.

73. During the review, Malta clarified that the waste-to-energy facility will treat refuse-derived fuel and other waste streams that cannot undergo other treatment. The ERT welcomed this information but considers that it was insufficient to ensure transparency of

the reporting. The ERT also noted that, in total, emissions from the waste sector will increase because of this facility. The ERT encourages Malta to include explicit information on how the facility contributes to the increase of emissions and how this increase has been calculated in its next NC.

## **5. Policies and measures related to implementation of commitments under the Kyoto Protocol**

74. Following decision 3/CP.15 Malta became an Annex I Party on 26 October 2010, and it had no emission reduction target for the first commitment period of the Kyoto Protocol. In the NC6, Malta reported on its package of PaMs adopted, implemented and planned in achieving its commitment under the second commitment period of the Kyoto Protocol. Malta reported in particular on the role of the EU ETS and the ESD in achieving the joint EU quantified economy-wide emission reduction target to reduce emissions by 20 per cent by 2020 compared with the 1990 level. Malta reported that the ESD sets a national target for Malta to limit the GHG emissions increase to 5 per cent above the 2005 level by 2020.

75. Despite Malta's status as an Annex I Party without a target, the ERT is of the view that the Party is required to provide information on how it promotes and implements decisions made by the International Civil Aviation Organization (ICAO) and International Maritime Organization (IMO) to limit or to reduce GHG emissions not included in the Montreal Protocol from aviation and marine bunker fuels. As this information was not provided in the NC6, the ERT recommends that Malta provide such information in its next NC.

76. In its NC6, Malta did not report any information on how it strives to implement PaMs under Article 2 of the Kyoto Protocol in such a way as to minimize adverse effects, including the adverse effects of climate change and effects on international trade and social, environmental and economic impacts, on other Parties, especially developing country Parties. Despite Malta's status as an Annex I Party without a target, the ERT considered that Malta is required to provide this information in the context of limitation or reduction of emissions referred to in Article 2, paragraph 2, of the Kyoto Protocol. As this information was not provided in the NC6, the ERT recommends that Malta provide such information in its next NC.

## **C. Projections and the total effect of policies and measures, including information on complementarity relating to the mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol**

77. In its NC6, Malta has reported emission projections under a 'without measures', 'with measures' and 'with additional measures' scenario until 2030.

### **1. Projections overview, methodology and key assumptions**

78. The GHG emission projections provided by Malta in the NC6 include a 'with measures', a 'with additional measures' and a 'without measures' scenario until 2030, presented relative to actual inventory data for 1990–2011, but with data presented only in graphs. The 'with measures' projection was also presented in the NC6 in a tabular format (for 2015, 2020, 2025 and 2030), but not relative to actual inventory data. The ERT noted that presenting all projections relative to actual inventory data in tabular format could increase the transparency of Malta's reporting.

79. Projections are presented on a sectoral basis, using the same sectoral categories used in the PaMs section. The 'with measures' scenario is presented on a gas-by-gas basis for

CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O, and collectively for F-gases (HFCs, PFCs and SF<sub>6</sub>). Projections are also provided in an aggregated format for each sector as well as for a national total, using global warming potential values.

80. The NC6 does not include emission projections related to fuel sold to ships and aircraft engaged in international transport. The ERT recommends that Malta report, to the extent possible, projections related to fuel sold to ships and aircraft engaged in international transport separately, rather than included in the totals, in its next NC.

81. The 'without measures' scenario is a 'business as usual' scenario that excludes all PaMs implemented, adopted and planned after the year used as a starting point (2010 for the energy sector; 2011 for other sectors). The 'with measures' scenario includes implemented and adopted PaMs, and the 'with additional measures' scenario includes the effect of planned PaMs. However, the ERT noted that there is lack of transparency regarding the expected start and end year for each planned PaM in the 'with additional measures' scenario. To improve transparency, the ERT encourages Malta to report on this matter in its next NC.

82. Malta has reported limited information on the methodology used for the projections in the energy and the waste sectors, and the methodology used for projections in the other sectors is not provided at all. There is also limited information on the type of model used for the energy sector and the original purpose the model was designed for. The ERT encourages Malta to improve the transparency of its reporting by providing in its next NC transparent information on the methodology and models or approaches used to make projections for each sector, and how sectoral projections were aggregated to take into account policy overlaps and synergies.

83. In the NC6, Malta has not reported on key underlying assumptions and values of variables such as GDP, population, energy efficiency, national and international oil prices and prices of other energy alternatives. The ERT encourages Malta to report such information in its next NC.

84. Malta also did not report the sensitivity analysis done for the assumptions of its projections. The ERT encourages Malta to conduct a sensitivity analysis on the key assumptions and to report the results in its next NC.

## **2. Results of projections**

85. Malta, in its NC6, reported that it had no target under the first commitment period of the Kyoto Protocol, 2008–2012. For the second commitment period, Malta has committed to contributing to the achievement of the joint EU emission reduction target of 20 per cent by 2020 compared with the base year. The target for the EU and its member States is formalized in the EU's climate and energy package legislation. Under the ESD, Malta has a national target to limit the growth of emissions to 5 per cent by 2020 compared with 2005 for the sectors not included in the EU ETS.

86. The projected emissions by 2020 are 94.5 and 9.0 per cent above the 1990 level in the 'without measures' and 'with measures' scenarios, respectively, and 13.5 per cent below the 1990 level in the 'with additional measures' scenario. The emissions are projected to increase from 2020 to 2030 in all scenarios, owing to increases in the energy and transport sectors. The ERT considers that the reasons for the increase in emissions between 2020 and 2030 are not sufficiently explained in the NC6 and encourages the Party to improve transparency in its next NC by providing more information on the projected emission trends. In the 'without measures' and 'with measures' scenarios, the projected emissions in 2030 are 131.4 and 15.9 per cent above the 1990 level, respectively, and in the 'with additional measures' scenario, 10.6 per cent below the 1990 level. The main planned measures included in the 'with additional measures' scenario are the conversion of

electricity generation from oil to natural gas and the promotion of wind energy (see paras. 48 and 53 above).

87. According to the data presented in the CTF tables (see para. 78 above), in the ‘with measures’ scenario, emissions are projected to decrease by 26.4 per cent by 2020 compared with 2011. CO<sub>2</sub> and CH<sub>4</sub> emissions are projected to decrease by 30.5 and 1.1 per cent, respectively, whereas N<sub>2</sub>O and HFC emissions are projected to increase by 6.2 and 13.6 per cent, respectively. PFC emissions are projected to increase from 0.1 kt CO<sub>2</sub> eq in 2011 to 3.8 kt CO<sub>2</sub> eq in 2020 (3,700.0 per cent), and SF<sub>6</sub> emissions are projected to remain at the 2011 level (1.6 kt CO<sub>2</sub> eq) in 2020.

88. Energy sector emissions are projected to decrease by 30.4 per cent from 2011 to 2020 in the ‘with measures’ scenario, and transport and waste sector emissions are projected to decrease by 11.0 and 9.3 per cent, respectively. Emissions from the industrial processes and agriculture sectors are projected to increase by 16.2 and 20.8 per cent, respectively. However, the ERT noted that in the CTF tables used in this comparison, total sectoral emissions in all projections exceed reported total emissions. During the review, Malta explained that the discrepancy between the sum of projected sectoral emissions and total reported emissions occurred because the emissions reported in the energy sector also include emissions which are reported in other sectors, such as transport (see the report of the technical review of the first biennial report of Malta, FCCC/TRR.1/MLT).

89. In accordance with the ESD, Malta has a national target to limit the growth of emissions to 5 per cent by 2020 compared with 2005 for the sectors not included in the EU ETS. In figure 4-8 of its NC6, Malta provided projected emissions for the sectors covered by the ESD. The figure indicates that Malta is in a position to meet its national target under the ESD. However, the ERT considers that there is a lack of transparency regarding how the projected emissions presented in figure 4-8 were related to the reported ‘with measures’ and ‘with additional measures’ scenario projections. The ERT welcomed the presentation of a separate projection for emissions covered by the ESD but considers that further information on this projection, in particular regarding which PaMs (implemented, adopted and planned) it includes, could improve the transparency of reporting.

90. The projected emission levels under different scenarios and information on the Kyoto Protocol targets and quantified economy-wide emission reduction target are presented in table 5 and the figure.

Table 5  
**Summary of greenhouse gas emission projections for Malta**

	<i>Greenhouse gas emissions (kt CO<sub>2</sub> eq per year)</i>	<i>Changes in relation to the base year<sup>a</sup> level (%)</i>	<i>Changes in relation to the 1990 level (%)</i>
Kyoto Protocol target for the second commitment period (2013–2020) <sup>b</sup>	Not available yet		
Quantified economy-wide emission reduction target under the Convention <sup>c</sup>	Not available yet		
Inventory data 1990 <sup>d</sup>	2 006.56	NA	0.0
Inventory data 2011 <sup>d</sup>	3 021.19	NA	50.6
Average annual emissions for 2008–2011 <sup>d</sup>	3 014.72	NA	50.2
‘Without measures’ projections for 2020 <sup>e</sup>	3 902.15	NA	94.5

	<i>Greenhouse gas emissions (kt CO<sub>2</sub> eq per year)</i>	<i>Changes in relation to the base year<sup>a</sup> level (%)</i>	<i>Changes in relation to the 1990 level (%)</i>
‘With measures’ projections for 2020 <sup>e</sup>	2 186.38	NA	9.0
‘With additional measures’ projections for 2020 <sup>e</sup>	1 735.81	NA	-13.5
‘Without measures’ projections for 2030 <sup>e</sup>	4 643.46	NA	131.4
‘With measures’ projections for 2030 <sup>e</sup>	2 324.99	NA	15.9
‘With additional measures’ projections for 2030 <sup>e</sup>	1 794.64	NA	-10.6

*Abbreviation:* NA = not applicable.

<sup>a</sup> “Base year” in this column refers to the base year used for the target under the Kyoto Protocol.

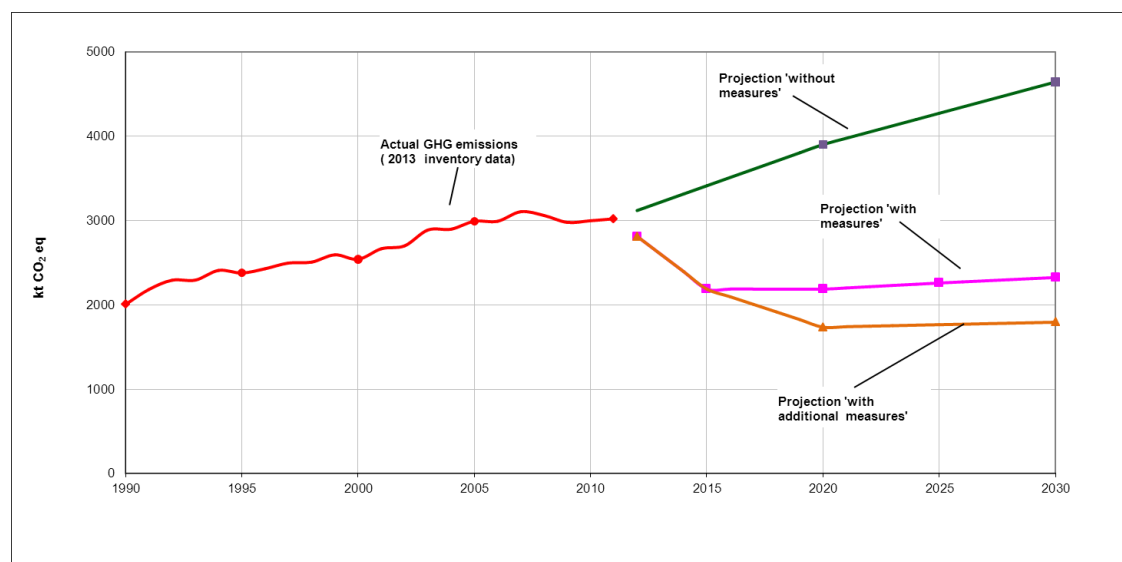
<sup>b</sup> The Kyoto Protocol target for the second commitment period (2013–2020) is a joint target for the European Union and its 28 member States and Iceland. The target is to reduce emissions by 20 per cent by 2020 compared with the base year (1990) level. The target for sectors not covered by the European Union Emissions Trading System is a limit of 5 per cent increase of emissions for Malta by 2020 compared with 2005 under the European Union effort-sharing decision.

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

<sup>d</sup> Malta’s 2013 greenhouse gas inventory submission; the emissions are without land use, land-use change and forestry.

<sup>e</sup> Malta’s sixth national communication and first biennial report.

## Greenhouse gas emission projections



*Sources:* (1) Data for the years 1990–2011: Malta’s 2013 greenhouse gas inventory submission; the emissions are without land use, land-use change and forestry; (2) Data for the years 2012–2030: Malta’s sixth national communication and first biennial report; the emissions are without land use, land-use change and forestry.

*Abbreviation:* GHG = greenhouse gas.

**3. Total effect of policies and measures**

91. In the NC6, Malta refers to figure 4-7 on projections in its presentation of the estimated and expected total effect of implemented and adopted PaMs. The ERT considers that the presentation lacked transparency, and that the information was incomplete, as the total effect of PaMs was not presented in terms of GHG emissions avoided or sequestered, by gas (on a CO<sub>2</sub> eq basis). Furthermore, Malta did not present information required by the UNFCCC reporting guidelines on NCs on factors and activities for each sector for the years 1990 to 2020.

92. During the review, Malta provided additional information, elaborating on the estimated total effect of implemented and adopted as well as planned PaMs by sector. According to the information provided during the review, the total effects of implemented and adopted PaMs without LULUCF are 1,715.77 kt CO<sub>2</sub> eq by 2020 and 2,318.47 kt CO<sub>2</sub> eq by 2030. PaMs targeting the energy sector are expected to deliver the largest emission reductions (in particular the closure of the oil-fired Marsa power station and consequently the installation of new capacity and a connection to the Italian electricity grid), followed by PaMs targeting the transport and industrial processes sectors (in particular the biofuel substitution obligation, the promotion of transport modal shift and the implementation of the European Union regulation on F-gases). The ERT noted that the sum of sectoral impacts of PaMs was greater than the reported total effect of PaMs (see para. 88 above). The most effective PaMs and drivers behind GHG emission reductions are described in chapter II.B above. Table 6 provides an overview of the total effect of PaMs as provided to the ERT during the review.

93. The ERT recommends that in its next NC Malta provide an estimate of the total effect of PaMs by gas (on a CO<sub>2</sub> eq basis), in accordance with the ‘with measures’ definition, compared with a situation without such PaMs. The ERT also encourages Malta to present the total effect of planned PaMs and to report the total effect of adopted, implemented and planned PaMs in tabular format, in line with the information provided to the ERT during the review.

94. Malta did not present information required by the UNFCCC reporting guidelines on NCs on factors and activities for each sector for the years 1990 to 2020. The ERT recommends that Malta provide in its next NC relevant information on factors and activities for each sector for at least 1990 to 2020 to provide the reader with an understanding of emission trends.

95. The ERT noted that several PaMs have an impact on both emissions included and not included in the EU ETS. The ERT noted that reporting of the effects of PaMs for the EU ETS sectors and for sectors not covered by the EU ETS separately could improve the transparency of information and enable an assessment by the ERT of Malta’s progress towards its emission reduction target.

**Table 6**  
**Projected effects of planned, implemented and adopted policies and measures in 2020 and 2030**

Sector	Effect of implemented and adopted measures (kt CO <sub>2</sub> eq)		Effect of planned measures (kt CO <sub>2</sub> eq)		Effect of implemented and adopted measures (kt CO <sub>2</sub> eq)		Effect of planned measures (kt CO <sub>2</sub> eq)		Relative value (% of 1990 emissions)
	Relative value (% of 1990 emissions)	Relative value (% of 1990 emissions)	Relative value (% of 1990 emissions)	Relative value (% of 1990 emissions)	Relative value (% of 1990 emissions)	Relative value (% of 1990 emissions)	Relative value (% of 1990 emissions)		
	2020				2030				
Energy (without transport)	1 519	99	389	25	1 997	131	422	28	
Transport	279	80	NA	NA	382	109	NA	NA	

Sector	<i>Effect of implemented and adopted measures (kt CO<sub>2</sub> eq)</i>	<i>Relative value (% of 1990 emissions)</i>	<i>Effect of planned measures (kt CO<sub>2</sub> eq)</i>	<i>Relative value (% of 1990 emissions)</i>	<i>Effect of implemented and adopted measures (kt CO<sub>2</sub> eq)</i>	<i>Relative value (% of 1990 emissions)</i>	<i>Effect of planned measures (kt CO<sub>2</sub> eq)</i>	<i>Relative value (% of 1990 emissions)</i>
	2020				2030			
Industrial processes	105	32 067	4	1 158	211	64 286	4	1 158
Agriculture	31	35	NA	NA	43	49	NA	NA
Land-use change and forestry	5	9	NA	NA	5	9	NA	NA
Waste management	60	160	14	36	68	180	50	133
<b>Total</b>	<b>1 716</b>	<b>86</b>	<b>451</b>	<b>22</b>	<b>2 318</b>	<b>116</b>	<b>530</b>	<b>26</b>

*Source:* Information provided during the review.

*Note:* The total effect of implemented and adopted policies and measures is defined as the difference between the ‘without measures’ and ‘with measures’ scenarios; the total effect of planned policies and measures is defined as the difference between the ‘with measures’ and ‘with additional measures’ scenarios. The value in the row “total” excludes land use, land-use change and forestry and is not equal to the sum of sectoral impacts (see para. 92 above).

*Abbreviation:* NA = not available.

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

96. Malta did not have a quantified emission reduction target for the first commitment period of the Kyoto Protocol. Malta reported in its NC6 that it has not participated in mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol.

#### D. **Provision of financial resources and technology transfer to developing country Parties, including information under Articles 10 and 11 of the Kyoto Protocol**

97. Malta is not a Party included in Annex II to the Convention and is therefore not obliged to adopt measures and fulfil obligations as defined in Article 4, paragraphs 3, 4 and 5, of the Convention. However, the NC6 of Malta does include some relevant information, and additional information was provided during the review. The ERT assessed this information and its findings are indicated in this report. The ERT commends Malta for the information provided.

98. In its NC6, Malta provided information on provision of support. In particular, Malta reported on financial resources provided through bilateral and regional channels in 2011 and 2012 under the fast-start finance programme. Table 7 summarizes information on financial resources.

Table 7

##### **Summary of information on financial resources for 2011–2012**

(United States dollars<sup>a</sup>)

Allocation channel of public financial support	Years of disbursement	
	2011	2012
Contributions through bilateral and regional channels: fast-start finance	405 510	405 609



<sup>a</sup> The exchange rate used for United States dollars in this table is the same as that used in the biennial report of Malta. Therefore, the figures in this table are slightly different from those reported in the NC6, in which different exchange rates were used.

99. In its NC6, Malta reported on funding for the years 2011 and 2012 in the areas of mitigation, adaptation and cross-cutting issues to support projects in developing countries. Its technology transfer activities in 2011 and 2012 include those undertaken with African countries (Ethiopia, Ghana, Kenya, Madagascar, Uganda, United Republic of Tanzania) and Asian countries (India, Philippines), specifically on water management and sanitation and on promoting the implementation of projects to introduce RES.

## **E. Vulnerability assessment, climate change impacts and adaptation measures**

100. In its NC6, Malta has provided the required information on the expected impacts of climate change in the country and on adaptation options. Malta finalized its National Adaptation Strategy in 2012.

101. During the review, Malta provided additional information, elaborating on the challenges faced in relation to the analysis of expected impacts of climate change and vulnerability assessment. Malta informed the ERT that the assessment of expected impacts of climate change for different sectors presented in chapter 5 of the NC6 was mainly based on expert judgement of known and potential impacts underpinned by an analysis of available information, which lacks, to a large extent, quantified empirical data. Malta also confirmed during the review that the gap in knowledge has been recognized and that section 5.3.1.2 of the NC6 highlights the need for local capacity-building. Malta further informed the ERT about the limitations of the scenario analysis resulting from limitations in available human resources and data storage facilities. The ERT welcomed the intention of Malta to improve its capacity in this field. Malta also clarified during the review that the Intergovernmental Panel on Climate Change (IPCC) *Technical Guidance for Assessing Climate Change Impacts* was used by the University of Malta Climate Research Group as guidance for work relating to modelling of climate impacts. The ERT encourages Malta to improve the transparency of its reporting by including in its next NC updated information on the expected impacts of climate change for different sectors.

102. In its NC6, Malta reported on its National Adaptation Strategy, which was built upon the work on adaptation carried out at the time of the submission of Malta's second NC (submitted when Malta was a Party not included in Annex I to the Convention, in 2010). The primary focus of the strategy is to highlight the need for awareness of adaptation to climate change, and to instil a sense of ownership across all sectors to mainstream climate change into cross-sectoral and sectoral policies in order to facilitate the implementation of adaptation measures. Drafting of legislation laying down a legal framework for climate change action is under consideration, which, together with the planned strengthening of the institutional arrangements, should ensure an efficient administrative, policy and legal approach to adaptation measures. The process to mainstream climate change across all sectors and to facilitate cooperation accordingly is currently facilitated by inter-departmental and inter-ministerial committees.

103. Malta reported in its NC6 that it aims to facilitate cooperation between the EU and Mediterranean states in the compilation of data and the study of observation systems to enhance climate change resilience in the Euro-Mediterranean region. Cooperation may improve data modelling, including emission scenarios and climate change impact scenarios at the local scale, as well as monitoring systems. A regional geographic information system may also be established, including relevant data on climate change. Malta also reported that

it is committed to supporting opportunities for increasing technical know-how and capacity-building within the EU, as a small island State and through the Union for the Mediterranean in order to foster outreach with similar states with similar vulnerabilities.

104. Table 8 summarizes the information on vulnerability and adaptation to climate change presented in the NC6.

Table 8

**Summary of information on vulnerability and adaptation to climate change**

<i>Vulnerable area</i>	<i>Examples/comments/adaptation measures reported</i>
Agriculture and food security	<p><i>Vulnerability:</i> Reduction of overall crop yield; reduction of cereal production in the southern Mediterranean; accelerated grape ripening; increase in the incidence of pest outbreaks; increase in irrigation needs; increase in air temperature, which may affect livestock behaviourally or physiologically; deterioration of water quality in Malta's aquifers as a result of sea level rise; decrease in soil quality; increase in soil erosion due to the intensity of rainfall</p> <p><i>Adaptation:</i> Better management and sustainable exploitation of natural resources by farming communities; intensive revision of existing laws and policies aimed at promoting soil conservation; assessment of laws relating to veterinary practices, plant health and agriculture to assist these sectors to adapt to climate change; identification of the most adequate policy and legal instruments that can be used to prepare these sectors for adaptation (if necessary, supplemented by new laws, policies and plans); cost-benefit analysis related to socioeconomic impacts of climate change; establishment of rules for the marketing of vegetative propagation, planting material and conditions for the importation and transport of plant material and plant pests or other organisms for the purposes of scientific research or otherwise; design and introduction of specific indicators for agriculture in Malta, such as an index for adaptive capacity and vulnerability</p>
Biodiversity and natural ecosystems	<p><i>Vulnerability:</i> <b>Terrestrial ecosystems:</b> Loss of biodiversity and increased risk of species extinction; shift in the distribution of species; inundation of low-lying areas potentially obliterating habitats, pushing migration inland and increasing salinization, which will affect the aquifer and will favour halophytic vegetation; temperature increase, favouring subtropical species; decrease in species richness in freshwater habitats; increased desertification and fires; decreased rainfall, leading to a loss of hydrophilic species and an increase in soil salinity, droughts and sea water contamination of groundwater, which will affect the populations of migratory birds residing in inland wetlands. <b>Marine ecosystems:</b> higher sea temperature, facilitating the spread of alien species; shift in Mediterranean species; change in coastal currents, with impacts on littoral and sub-littoral communities and <i>Posidonia oceanica</i> meadows; change in deep water circulation, which may reduce spring phytoplankton blooms and move production to deep sea layers; increased incidence of low oxygen areas in bottom water, which may have an impact on bays and inlets; sea level rise, with effects on the distribution of benthic and pelagic organisms as well as potential effects on sea grass meadows by exposing them to more wave action and swell, leading to erosion and loss of habitat; inundation, with effects on the zonation patterns of rocky shores; increase in the concentration of dissolved carbon dioxide, leading to greater erosion of coral and impacts on most molluscs and sea urchins</p> <p><i>Adaptation:</i> Protection of natural habitats</p>

<i>Vulnerable area</i>	<i>Examples/comments/adaptation measures reported</i>
Fisheries and aquaculture	<p><i>Vulnerability:</i> Stress due to increased water temperature and decreased pH; extreme weather events, leading to damage or destruction of facilities; loss of business, loss of stock and large-scale stock escape, with potential consequences for biodiversity; increase in frequency of disease and toxic events; sea level rise and conflicts of interest with coastal defence systems; uncertain supply of fishmeal and oils from capture fisheries; reduction of genetic diversity of wild stock</p> <p><i>Adaptation:</i> Better management and sustainable exploitation of natural resources by fishing communities; assessment of fisheries-related laws to assist this sector to adapt to climate change; identification of the most adequate policy and legal instruments that can be used to prepare this sector for adaptation (if necessary, supplemented by new laws, policies and plans)</p>
Tourism	<p><i>Vulnerability:</i> The impacts of climate change on tourism are largely unknown and still subject to rudimentary research that needs to be intensified to ensure the sector's resilience</p> <p><i>Adaptation:</i> Research on impacts on the tourism sector, including: impacts of water scarcity; impacts of changes in winter and summer energy and power demand of hotels and other tourist establishments; impacts on energy, water, road infrastructure, historical heritage, landscape and the rural environment; costs of physical repair arising from damage to infrastructure. The Malta Tourism Authority is drawing up a Tourism Action and Contingency Plan that incorporates both mitigation and adaptation measures specific to the tourism sector</p>
Human health, civil protection and immigration	<p><i>Vulnerability:</i> Temperature increase, leading to an increase in the incidence of heat stroke and the number of heat-related deaths, with the elderly, infants and young children at a greater risk; health of construction workers and those working in the primary industries (e.g. agriculture, fisheries) and exposed to high temperatures, rainfall and extreme weather events; increase in salmonellosis; introduction of new species of mosquitos (e.g. Asian Tiger mosquito); increase in the incidence of storms, with the associated risk of death or injury; increase in temperature and precipitation and sea level rise when interfaced with demographic shifts may cause considerable stress on the economy of the islands</p> <p><i>Adaptation:</i> Options to strengthen surveillance and assessment of infectious diseases and their vectors; risk assessment and identification of measures to reduce outbreaks of climate change related vector-borne disease as well as planning for control of outbreaks; early warning systems for heatwaves, flooding and other extreme weather events; public education campaigns on adaptation, particularly among vulnerable groups; increased insurance cover for climate change risks; identification of financial guarantees and incentives among stakeholders; awareness of climate change impacts within government, industry and the community, supporting the cultural transitions required for the adoption of more climate change friendly technologies, designs and operations by public and private operators; research on the effects of climate change on irregular migration</p>
Infrastructure and land use	<p><i>Vulnerability:</i> Sea level rise, with associated effects on coastal development, protected areas, ports and infrastructure; increase in rain intensity, leading to more flooding in urban areas and of roads; longer drought periods, leading to desertification; increase in wind gust intensity, affecting tall buildings; extreme weather events, affecting road surfaces, rubble walls, retaining walls and power lines; increasing costs</p>

<i>Vulnerable area</i>	<i>Examples/comments/adaptation measures reported</i>
	<p>due to potential structural failure of infrastructure by excess heat, causing damage such as thermal expansion of road surfaces, airport tarmacs and concrete structures along the transport network; change in landfill site hydrology and temperature, potentially affecting landfill degradation rate and leachate production and composition; increase in disruptions to waste transport resulting from flooding of infrastructure; decrease in precipitation and increase in incidence of heatwaves, potentially affecting in a negative manner the cooling process of thermal power plants, demand and distribution of electricity in the islands</p> <p><i>Adaptation:</i> Assessment of the flood risk of water courses, river basins and coastlines; mapping flood risk areas and humans at risk; measures to reduce flood risk; public access to flood risk information and planning processes; establishment of flood risk management plans, synergizing public participation in their preparation</p>
Water resources	<p><i>Vulnerability:</i> Low annual and seasonal rainfall leading to decreased availability of, and therefore increased pressure on, freshwater resources, conflicts between the agriculture and tourism sectors, and low groundwater recharge; high rainfall intensity leading to lower recharge rates of groundwater resources; frequent occurrence of high rainfall years, leading to high run-off; increase in temperature, leading to increased demand for water resources; greater evapotranspiration; increase in demand for irrigation water; sea level rise, leading to increase in groundwater salinity</p> <p><i>Adaptation:</i> A holistic approach to water management, maintaining the quantity, quality and status of groundwater resources via the introduction of a robust legal framework; a comprehensive national Water Catchment Management Plan, which mainstreams requirements for climate change adaptation; treatment of sewage water to provide an alternative supply of water for industry and agriculture; maximizing rainwater harvesting; assessment of the relationship of risks between climate change, water resources, food security and public health</p>

## F. Research and systematic observation

105. In its NC6, Malta has provided information on its actions relating to research and systematic observation, and addressed both domestic and international activities, including the IPCC.

106. Malta has not provided a summary of information on Global Climate Observing System (GCOS) activities in accordance with the UNFCCC reporting guidelines on NCs, and it is not clear which organization is responsible for Malta's participation in GCOS. During the review, Malta provided additional information, explaining that it contributes to Europe's Global Monitoring and Environment Security initiative (GMES) (now called COPERNICUS). Due to Malta's small size and its limited resources, contributions to GCOS activities continue mainly through EU initiatives at the regional level. The ERT recommends that Malta report in its next NC summary information on its GCOS activities.

107. Malta has not reported on its action taken to support research and systematic observation related capacity-building in developing countries, although the Party mentions in the NC6 that the Centre for Environmental Education and Research (CEER) facilitates resource transfer and capacity-building in Malta and the Euro-Mediterranean region. The ERT recommends that Malta report in its next NC on its action taken to support research and systematic observation related capacity-building in developing countries.

108. In its NC6, Malta did not use the structure presented in the annex to the UNFCCC reporting guidelines on NCs; that is, with separate sections for: (i) general policy on research and systematic observation; (ii) research; and (iii) systematic observation. The ERT recommends that Malta use this structure in its next NC.

109. In its NC6, Malta has included information on the climate research policy and action to support research activities of various national and international institutions and organizations. The Party's National Research and Innovation Strategy 2020 was launched for public consultation in 2014. The strategy includes a specific area for building capacity for excellence in climate change adaptation. The University of Malta has the intention of setting up the Centre of Excellence in Climate Change Research and the Government has expressed its intention to support this initiative, which is expected to support the implementation of the National Adaptation Strategy.

110. During the review, Malta explained that beyond the National Research and Innovation Strategy, all budgeting and prioritization of public investment is conducted through the annual budgeting exercise which is led by the Ministry for Finance. Public investment in research, development and innovation is also guided by EU policies in these areas. In the NC6, Malta reported that to support research, the Ministry of Education provided EUR 4.2 million in funding in 2009–2012 under the ministry's Strategic Educational Pathways Scholarships scheme for masters and doctoral studies.

111. Malta reported in its NC6 that the University of Malta is the main institution undertaking climate change research. The Climate Research Group in the Department of Physics of the Faculty of Science has installed two weather prediction models (Weather Research and Forecasting Model (WRF) and Enviro-HIRLAM) and two regional climate models (RCMs) (PRECIS and RegCM4) on a super computer cluster (ALBERT). The climate change related research topics of the Climate Research Group include: (i) development of an aerosol module in an RCM; (ii) implementation of code for new chemical reactions in an RCM; (iii) improvement of RCM performance for small islands; (iv) regional analysis of meteorological extremes; (v) development of predictions for air quality over small islands; and (vi) new physics experiments with WRF. The Climate Research Group is active in the European research community through participation in the COST (European Cooperation in Science and Technology) Earth System Science and Environmental Management (ESSEM) domain. The group is also active in Action ES1102 (Validating and Integrating Downscaling Methods for Climate Change and Research (VALUE)) and Action ES1004 (European Framework for Online Integrated Air Quality and Meteorology Modelling).

112. Malta in its NC6 provided some information on the current status of national and international programmes and projects for climate observing systems. The Marine Ecology Research Group undertook research for the Tropical Signals project, which is part of a systematic research and observation programme carried out by 21 research teams from 15 Mediterranean countries aiming to detect, monitor and understand the effects of climate warming on Mediterranean marine biodiversity using representative biological indicators of change. The Physical Oceanography Unit of the International Ocean Institute-Malta Operational Centre (IOI-MOC) undertakes research in coastal meteorology, hydrography and physical oceanography, with an emphasis on the experimental study of the hydrodynamics of the sea in the vicinity of the Maltese islands. The Institute offers facilities for gathering, processing, analysing and managing high-quality physical oceanographic observations for both long-term and baseline studies as well as for general applications in marine environmental research and assessment. Currently IOI-MOC is running statistical comparisons between satellite sea surface temperature values and values obtained through the in situ data loggers in order to assess the validity of remote sensing data. The IOI-MOC also participates in the Tropical Signals project, deploying water temperature data loggers at depths ranging from the surface to 40 m below the surface.

## G. Education, training and public awareness

113. In the NC6, Malta has provided information on its actions relating to education, training and public awareness at the domestic level.

114. Malta reports in the NC6 that climate change related subjects appeared in the school curriculum in 2008 at the secondary level and in 2002 at the post-secondary level. The need to include Education for Sustainable Development (as introduced in the United Nations Economic Commission for Europe's Strategy for Education for Sustainable Development) in the national curriculum was repeatedly suggested by several national documents focusing on sustainable development and climate change. The target was achieved in 2012 with the publication of the National Curriculum Framework, which proposes Education for Sustainable Development as a cross-curricular theme. The next step, which is imminent, is the development of specific national curriculum guidelines that will regulate Education for Sustainable Development's integration within various subject areas. Malta also reported that at university level, there are several courses that address climate change.

115. Malta reported in its NC6 on various institutions that provide education on climate change, including CEER, which offers environmental education to empower citizens to actively participate in environmental decision-making and in initiatives that promote a good quality of life for all. CEER provides the focal point for coordinating environmental education initiatives, offering opportunities for environmental education, making scientific and technological research results more accessible to the public and facilitating resource transfer and capacity-building in Malta and the Euro-Mediterranean region. The Centre is involved in a number of international projects. For example, CEER developed an online teaching module on climate change in the EU project Raising Awareness for Development Cooperation.

116. The Islands and Small States Institute of the University of Malta promotes research and training on economic, social, cultural, ecological and geographical aspects of islands and small states. Climate change is one of the Institute's areas of interest, and the Institute is involved in a number of research initiatives. The Institute for European Studies is a multi-disciplinary teaching and research institute engaged in various research and publishing activities in European integration studies. Its current research programmes at the PhD level include climate change adaptation and international development.

117. In its NC6, Malta provided information about the EkoSkola programme and the Save and Reduce campaign, which constitute an important element of informal education on climate change related issues. EkoSkola provides a strong link between school-based awareness-raising and the initiation of community-based sustainability projects. The Save and Reduce campaign included house-to-house visits by eco-trainers on water and energy conservation and waste management.

118. During the review, Malta informed the ERT that the Malta Resources Authority recently undertook a public awareness campaign to promote energy savings in the domestic sector. This campaign included a series of information sessions on subjects such as: efficient driving; energy efficiency at home; approaches to increasing energy efficiency in buildings; and RES.

119. During the review, Malta informed the ERT that there is currently no official policy or strategy to address education, training and public awareness pertaining to climate change (see para 114). However, a board of governors has been appointed by the Ministry for Education and Employment to draft the National Strategy for Education for Sustainable Development (NSES). Malta also explained that there is no formal centralized mechanism to monitor, evaluate and improve public awareness campaigns on an ongoing basis, and that monitoring and evaluation of campaigns is the responsibility of the entities establishing

and implementing such campaigns. However, the NSESD is expected to address the need for a better mechanism for monitoring, evaluating and improving public awareness campaigns.

120. The ERT welcomed the additional information provided by Malta during the review and encourages the Party to include in its next NC further information regarding: (i) general policy toward education, training and public awareness; (ii) primary, secondary and higher education; (iii) public information campaigns; (iv) training programmes; (v) resource or information centres; (vi) involvement of the public and non-governmental organizations; and (vii) participation in international activities.

### III. Summary of reviewed supplementary information under the Kyoto Protocol

121. Malta did not become an Annex I Party (as the term is defined under Article 1, paragraph 7, of the Kyoto Protocol) until 26 October 2010, and it did not have a quantified emission reduction commitment for the first commitment period of the Kyoto Protocol. Therefore, the ERT considers that the Party was expected to report in its NC6 on only those reporting elements under Article 7, paragraph 2, of the Kyoto Protocol that are not related to a commitment under Article 3, paragraph 1, of the Kyoto Protocol. Nevertheless, in the NC6 and during the review, Malta reported some information for most of the reporting elements under Article 7, paragraph 2, of the Kyoto Protocol.

122. The supplementary information is located in different sections of the NC6. Table 9 provides an overview of supplementary information under Article 7, paragraph 2, of the Kyoto Protocol as well as references to the NC6 chapters in which this information is provided.

123. Of the supplementary information that Malta was expected to report (see para. 121 above), the following elements were not provided in the NC6: provisions to make publicly accessible the information on legislative arrangements and enforcement and administrative procedures established pursuant to the implementation of the Kyoto Protocol; identification of steps taken to promote and/or implement any decisions by ICAO and IMO in order to limit or to reduce GHG emissions not included in the Montreal Protocol from aviation and marine bunker fuels; and how Malta strives to implement PaMs under Article 2, paragraph 2, of the Kyoto Protocol in such a way as to minimize adverse effects, including the adverse effects of climate change and effects on international trade and social, environmental and economic impacts, on other Parties, especially developing country Parties. The technical assessment of the information reported under Article 7, paragraph 2, of the Kyoto Protocol is contained in the relevant sections of this report. The ERT recommends that Malta report all applicable elements of the supplementary information under Article 7, paragraph 2, of the Kyoto Protocol in its next NC.

Table 9  
**Overview of supplementary information under Article 7, paragraph 2, of the Kyoto Protocol**

<i>Supplementary information</i>	<i>Reference to the sixth national communication</i>
National registry	Section 2.6
National system	Section 2.2.3
Supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17	Not applicable

<i>Supplementary information</i>	<i>Reference to the sixth national communication</i>
Policies and measures in accordance with Article 2	Section 3.4
Domestic and regional programmes and/or legislative arrangements and enforcement and administrative procedures	Section 3.2
Information under Article 10	Chapters 3, 5, 6, 7 and 8
Financial resources	Not applicable

*Note:* Reporting on financial resources under the Kyoto Protocol is relevant for developed country Parties and other developed Parties that are included in Annex II to the Convention (Annex II Parties). As Malta is not an Annex II Party, it does not have an obligation to provide information on financial resources under Article 11 of the Kyoto Protocol, including on “new and additional” resources.

#### IV. Conclusions and recommendations

124. The ERT conducted a technical review of the information reported in the NC6 of Malta according to the UNFCCC reporting guidelines on NCs. The ERT concludes that the NC6 provides a good overview of the national climate policy of Malta. Malta did not become an Annex I Party (as the term is defined under Article 1, paragraph 7, of the Kyoto Protocol) until 26 October 2010, and it did not have a quantified emission reduction commitment for the first commitment period of the Kyoto Protocol. Therefore, the ERT considers that the Party was expected to report in its NC6 on only those reporting elements under Article 7, paragraph 2, of the Kyoto Protocol that are not related to a commitment under Article 3, paragraph 1, of the Kyoto Protocol. Nevertheless, in the NC6 and during the review, Malta reported some information for most of the reporting elements under Article 7, paragraph 2, of the Kyoto Protocol. Of the supplementary information that Malta was expected to report, the following elements were not provided in the NC6: provisions to make publicly accessible the information on legislative arrangements and enforcement and administrative procedures established pursuant to the implementation of the Kyoto Protocol; identification of steps taken to promote and/or implement ICAO and IMO decisions; and how Malta strives to implement PaMs under Article 2, paragraph 2, of the Kyoto Protocol in such a way as to minimize adverse effects, including the adverse effects of climate change and effects on international trade and social, environmental and economic impacts, on other Parties, especially developing country Parties.

125. Malta’s emissions for 2011 were estimated to be 50.6 per cent above its 1990 level excluding LULUCF and 51.9 per cent above including LULUCF. Emission increases were owing to increased emissions from energy industries and transport. Total emissions excluding LULUCF increased by 54.8 per cent from 1990 to 2007, while since then, the trend has been relatively flat (a decrease of 2.7 per cent between 2007 and 2011).

126. In the NC6, Malta presents GHG projections for the period from 1990 to 2020 and 2030. Three scenarios are included: ‘without measures’; ‘with measures’; and ‘with additional measures’. The projected changes in GHG emissions under the ‘without measures’ scenario, in relation to 1990, and under the ‘with measures’ and ‘with additional measures’ scenarios, are +94.5, +9.0 and –13.5 per cent for the year 2020, respectively.

127. Under the Convention, Malta made a commitment to contribute to the achievement of the joint EU quantified economy-wide emission reduction target of 20 per cent of GHG emissions compared with the 1990 level by 2020. The EU ETS sectors have an EU-wide emission cap, and the ESD sets Malta a national target to limit emission growth in sectors not included in the EU ETS to 5 per cent above the 2005 level by 2020. In its NC6, Malta



provided projected emissions for the sectors covered by the ESD, which indicate that Malta is in a position to meet its national ESD target. The ERT welcomed the presentation of a separate projection for emissions covered by the ESD but considered that further information on this projection, in particular regarding which PaMs (implemented, adopted and planned) it includes, could improve the transparency of the reporting and enable an assessment by the ERT of the Party's progress towards its emission reduction target.

128. Malta has provided in its NC6 well-organized information on its package of PaMs implemented, adopted and planned. The key PaMs are related to the reduction of emissions from the two electricity generation plants in Malta included in the EU ETS and to the promotion of renewable energy, in particular wind and solar. In the sectors not covered by the EU ETS, the greatest emission reductions are expected to be achieved in transport (through biofuel substitution obligation and the promotion of transport modal shift) and in the industrial processes sector (through implementation of EU regulation on F-gases).

129. Malta is not a Party included in Annex II to the Convention and is therefore not obliged to adopt measures and fulfil obligations as defined in Article 4, paragraphs 3, 4 and 5, of the Convention. However, its NC6 did include some relevant information regarding the provision of financial resources and transfer of technology, for instance, information on fast-start finance for the years 2011 and 2012 (amounting to USD 405,510 and USD 405,609, respectively).

130. Malta finalized its National Adaptation Strategy in 2012 and is working to mainstream climate change into cross-sectoral and sectoral policies to facilitate the implementation of adaptation measures. Drafting of legislation laying down a legal framework for climate change action is under consideration, which, together with the planned strengthening of the institutional arrangements, should ensure an efficient administrative, policy and legal approach to adaptation measures. Malta has faced challenges in its analysis of expected impacts of climate change and vulnerability assessment because of a lack of available information, capacity and human resources, but the Party is working to improve its capacity in this field.

131. Malta has provided information on its actions relating to research and systematic observation and included information on its domestic and international activities. In addition to the National Research and Innovation Strategy, EU policies guide public investment in research, development and innovation. The University of Malta carries out modelling on climate change and several institutes contribute to systematic observation, such as the IOI-MOC which undertakes research in coastal meteorology, hydrography and physical oceanography and carries out water temperature measurements and compares them with satellite sea surface temperature values.

132. In its NC6, Malta has provided information on its actions relating to education, training and public awareness. Education for Sustainable Development is included as a cross-curricular theme in the National Curriculum Framework published in 2012. Several institutions provide education and training on climate change, including CEER and the Islands and Small States Institute. Awareness-raising campaigns have been implemented, including a recent campaign by Malta Resources Authority to promote energy savings in the domestic sector through information sessions on: efficient driving; energy efficiency at home; approaches to increasing energy efficiency in buildings; and RES.

133. In the course of the review, the ERT formulated several recommendations relating to the timeliness, completeness and transparency of Malta's reporting under the Convention and its Kyoto Protocol. The key recommendations<sup>5</sup> are that Malta:

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<sup>5</sup> The recommendations are given in full in the relevant sections of this report.

- (a) Improve the preparation process of the NC to ensure that the next NC will be submitted by the agreed date;
- (b) Improve the completeness of reporting by including in the next NC the following information:
- (i) A summary of the GHG inventory, including emission trend tables given in CRF tables;
  - (ii) A description of any provisions to make publicly accessible the information on the legislative arrangements and enforcement and administrative procedures established pursuant to the implementation of the Kyoto Protocol;
  - (iii) All the information on PaMs listed in the table referred to in paragraph 17 of the UNFCCC reporting guidelines on NCs;
  - (iv) Information on how Malta believes its PaMs modify longer-term trends in anthropogenic GHG emissions and removals consistent with the objective of the Convention;
  - (v) Steps taken to promote and/or implement any decisions by ICAO and IMO in order to limit or reduce emissions of GHGs not controlled by the Montreal Protocol from aviation and marine bunker fuels;
  - (vi) Information on how Malta strives to implement PaMs under Article 2, paragraph 2, of the Kyoto Protocol in such a way as to minimize adverse effects, including the adverse effects of climate change and effects on international trade and social, environmental and economic impacts, on other Parties, especially developing country Parties;
  - (vii) To the extent possible, projections related to fuel sold to ships and aircraft engaged in international transport separately and not included in the totals;
  - (viii) An estimate of the total effect of the PaMs by gas (on a CO<sub>2</sub> eq basis), in accordance with the 'with measures' definition, compared with a situation without such PaMs;
  - (ix) Relevant information on factors and activities for each sector for at least 1990 to 2020, to provide the reader with an understanding of emission trends;
  - (x) Summary information on GCOS activities;
  - (xi) Actions taken to support research and systematic observation related capacity-building in developing countries;
- (c) Improve the transparency of reporting by including in the next NC the following information:
- (i) Further information on how the national circumstances and changes therein affect GHG emissions and removals in Malta over time;
  - (ii) Information on drivers of trends in the industrial processes sector and more information on the implementation of the EU regulation on F-gases;
  - (iii) Information on research and systematic observation following the structure presented in the annex to the UNFCCC reporting guidelines on NCs.

134. Malta did not become an Annex I Party (as the term is defined under Article 1, paragraph 7, of the Kyoto Protocol) until 26 October 2010, and it did not have a quantified emission reduction commitment for the first commitment period of the Kyoto Protocol. Acknowledging that Malta did not have to report information related to the achievement of a target for the first commitment period, the ERT nevertheless recommends that the Party

report in the next NC all mandatory reporting elements under Article 7, paragraph 2, of the Kyoto Protocol.

## **V. Questions of implementation**

135. During the review, the ERT assessed the NC6 with regard to timeliness, completeness, transparency and adherence to the reporting guidelines on NCs. The ERT also reviewed the provided supplementary information under Article 7, paragraph 2, of the Kyoto Protocol, taking into account that Malta did not become an Annex I Party (as the term is defined under Article 1, paragraph 7, of the Kyoto Protocol) until 26 October 2010, and it did not have a quantified emission reduction commitment for the first commitment period of the Kyoto Protocol. No question of implementation was raised by the ERT during the review.

## Annex

### Documents and information used during the review

#### A. Reference documents

“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 preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual inventories”. FCCC/CP/1999/7. Available at <<http://unfccc.int/resource/docs/cop5/07.pdf>>.

“Guidelines for the preparation of the information required under Article 7 of the Kyoto Protocol”. Decision 15/CMP.1. Available at <<http://unfccc.int/resource/docs/2005/cmp1/eng/08a02.pdf#page=54>>.

“Guidelines for review under Article 8 of the Kyoto Protocol”. Decision 22/CMP.1. Available at <<http://unfccc.int/resource/docs/2005/cmp1/eng/08a03.pdf#page=51>>.

“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 23/CP.19. Available at <<http://unfccc.int/resource/docs/2013/cop19/eng/10a02.pdf#page=20>>.

FCCC/ARR/2013/MLT. Report of the individual review of the inventory submission of Malta submitted in 2013. Available at <<http://unfccc.int/resource/docs/2014/arr/mlt.pdf>>.

Third, Fourth, Fifth and Sixth National Communication of Malta. Available at <[https://unfccc.int/files/national\\_reports/annex\\_i\\_natcom/submitted\\_natcom/application/pdf/mlt\\_nc3,4,5,6.pdf](https://unfccc.int/files/national_reports/annex_i_natcom/submitted_natcom/application/pdf/mlt_nc3,4,5,6.pdf)>.

Common tabular format tables of Malta. Available at <[https://unfccc.int/national\\_reports/biennial\\_reports\\_and\\_iar/submitted\\_biennial\\_reports/items/7550.php](https://unfccc.int/national_reports/biennial_reports_and_iar/submitted_biennial_reports/items/7550.php)>.

2013 GHG inventory submission of Malta. Available at <[https://unfccc.int/national\\_reports/annex\\_i\\_ghg\\_inventories/national\\_inventories\\_submissions/items/7383.php](https://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/7383.php)>.

2014 GHG inventory submission of Malta. Available at <[https://unfccc.int/national\\_reports/annex\\_i\\_ghg\\_inventories/national\\_inventories\\_submissions/items/8108.php](https://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/8108.php)>.

#### B. Additional information provided by the Party

Responses to questions during the review were received from Mr. Saviour Vassallo (Malta Resources Authority), including additional material on policies and measures, greenhouse gas projections and recent climate policy developments in Malta. The following documents<sup>1</sup> were also provided by Malta:

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

Galdies, C. 2011. *The Climate of Malta: Statistics, Trends and Analysis 1951–2010*. Valletta: National Statistics Office, Malta.

Malta Resources Authority. 2013. *Malta's Biennial Report on Policies and Measures and Projected Greenhouse Gas Emissions. 2013. Submitted Pursuant to Article 3(2) of Decision 280/2004/EC Concerning a Mechanism for Monitoring Community Greenhouse Gas Emissions and for Implementing the Kyoto Protocol and the Related Implementing Provisions of Decision 2005/166/EC*.

Ministry for Resources and Rural Affairs. 2009. *National Strategy for Policy and Abatement Measures Relating to the Reduction of Greenhouse Gas Emissions*.

Ministry for Resources and Rural Affairs. 2012. *National Climate Change Adaptation Strategy*.

National Statistics Office, Malta. 2012. *Census of Agriculture 2010*.

National Statistics Office, Malta. 2013. *Agriculture and Fisheries 2012*.

National Statistics Office, Malta. 2013. *Transport Statistics 2013*.

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