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## **Report on the technical review of the fourth biennial report of Malta**

Developed country Parties were requested by decision 2/CP.17 to submit their fourth biennial report to the secretariat by 1 January 2020. This report presents the results of the technical review of the fourth biennial report of 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”. The review took place from 15 to 19 June 2020 remotely.

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## Abbreviations and acronyms

AEA	annual emission allocation
Annex II Party	Party included in Annex II to the Convention
AR	Assessment Report of the Intergovernmental Panel on Climate Change
BR	biennial report
CH <sub>4</sub>	methane
CO <sub>2</sub>	carbon dioxide
CO <sub>2</sub> eq	carbon dioxide equivalent
CTF	common tabular format
ERT	expert review team
ESD	European Union effort-sharing decision
EU	European Union
EU ETS	European Union Emissions Trading System
F-gas	fluorinated gas
GHG	greenhouse gas
GWP	global warming potential
HFC	hydrofluorocarbon
IE	included elsewhere
IMSC-NECP	Inter-Ministerial Steering Committee on the National Energy and Climate Plan
IPPU	industrial processes and product use
LULUCF	land use, land-use change and forestry
MRV	measurement, reporting and verification
NA	not applicable
NC	national communication
NE	not estimated
NECP	National Energy and Climate Plan
NF <sub>3</sub>	nitrogen trifluoride
NO	not occurring
N <sub>2</sub> O	nitrous oxide
PaMs	policies and measures
PFC	perfluorocarbon
PV	photovoltaic
RES	renewable energy source(s)
SF <sub>6</sub>	sulfur hexafluoride
UNFCCC reporting guidelines on BRs	“UNFCCC biennial reporting guidelines for developed country Parties”
UNFCCC reporting guidelines on NCs	“Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications”
WAM	‘with additional measures’
WEM	‘with measures’
WOM	‘without measures’

## **I. Introduction and summary**

### **A. Introduction**

1. This is a report on the centralized technical review of the BR4<sup>1</sup> of Malta. The review was organized by the secretariat in accordance with the “Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention”, particularly “Part IV: UNFCCC guidelines for the technical review of biennial reports from Parties included in Annex I to the Convention” (annex to decision 13/CP.20).

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

3. The review was conducted together with the review of one other Party included in Annex I to the Convention from 15 to 19 June 2020 remotely<sup>2</sup> by the following team of nominated experts from the UNFCCC roster of experts: Bernadett Benkó (Hungary), Amnat Chidthaisong (Thailand), Alessandro Francesco Ferrara (Italy), Benti Firdissa (Ethiopia), Nicolo Macaluso (Canada), Sini Maaria Niinistö (Finland), Hartley Walimwipi (Zambia) and Germain Zasy Ngisako (Democratic Republic of the Congo). Mr. Chidthaisong and Mr. Macaluso were the lead reviewers. The review was coordinated by Hajar Benmazhar and James Howland (secretariat).

### **B. Summary**

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

#### **1. Timeliness**

5. The BR4 was submitted on 3 January 2020, after the deadline of 1 January 2020 mandated by decision 2/CP.17. The CTF tables were also submitted on 3 January 2020. The BR4 and CTF tables were resubmitted on 30 June 2020 to address issues raised during the review. The resubmission included additional information on PaMs and indirect GHG emissions and changes to the information reported on the quantified economy-wide emission reduction target, use of market-based mechanisms and projections. Unless otherwise specified, the information and values from the latest submission are used in this report.

6. Malta informed the secretariat on 2 January 2020 about its difficulties with making a timely submission. In accordance with decision 13/CP.20, a Party should inform the secretariat thereof by the due date of the submission in order to facilitate the arrangement of the review process. The ERT noted with concern the delay in the submission and recommended that Malta make its next submission on time.

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

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

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

<sup>2</sup> Owing to the circumstances related to the coronavirus disease 2019, the technical review of the BR submitted by Malta had to be conducted remotely.

Table 1

**Summary of completeness and transparency of mandatory information reported by Malta in its fourth biennial report**

<i>Section of BR</i>	<i>Completeness</i>	<i>Transparency</i>	<i>Reference to description of recommendation(s)</i>
GHG emissions and removals	Complete	Transparent	–
Quantified economy-wide emission reduction target and related assumptions, conditions and methodologies	Complete	Transparent	–
Progress in achievement of targets	Complete	Mostly transparent	Issue 1 in table 4 Issues 2 and 5 in table 9
Provision of support to developing country Parties <sup>a</sup>	NA	NA	NA

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

<sup>a</sup> Malta is not an Annex II Party and is therefore not obliged to adopt measures and fulfil obligations defined in Article 4, paras. 3–5, of the Convention.

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

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

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

8. Total GHG emissions<sup>3</sup> excluding emissions and removals from LULUCF decreased by 14.9 per cent between 1990 and 2018, and total GHG emissions including net emissions or removals from LULUCF also decreased by 14.9 per cent over the same period. Generally, the emissions increased between 1990 and 2012, with small reductions occurring in a few years and a more significant one recorded in 2009 owing to the global financial crisis. Emissions reached their highest point in 2012 and decreased until 2016, mostly as a result of significant changes to electricity generation. Power plant decommissioning, fuel switching and the establishment of a connection with the European electricity grid for importing power contributed to the decrease in emissions between 2012 and 2016. However, an increase in local electricity generation since 2016 has resulted in a slight increase in emissions since then. Transport emissions have steadily increased since 1990 owing to continued increases in road transport activity.

9. Table 2 illustrates the emission trends by sector and by gas for Malta. Note that information in this section and table 2 is based on Malta’s 2020 annual submission, version 2, which has not yet been subject to review. All emission data in subsequent chapters are based on Malta’s BR4 CTF tables unless otherwise noted. The emissions reported in the Party’s 2020 annual submission are substantially different from the data reported in CTF table 1, which are derived from Malta’s national GHG inventory submitted in 2019. Sectoral recalculations were necessary in the 2020 annual submission because of revisions to data and methodologies and were particularly significant in the energy industries sector owing to revised consumption data from the statistical office of the EU. The recalculations resulted in total emissions without LULUCF that were 22.2 and 0.21 per cent greater in 1990 and 2017, respectively, in the 2020 annual submission compared with the data in the 2019 annual submission reported in the BR4.

<sup>3</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.

Table 2  
Greenhouse gas emissions by sector and by gas for Malta for 1990–2018

Sector	GHG emissions (kt CO <sub>2</sub> eq)					Change (%)		Share (%)	
	1990	2000	2010	2017	2018	1990–2018	2017–2018	1990	2018
	1. Energy	2 417.35	2 557.30	2 592.35	1 560.44	1 538.42	–36.4	–1.4	94.0
A1. Energy industries	1 765.51	1 607.62	1 868.14	718.69	698.06	–60.5	–2.9	68.7	31.9
A2. Manufacturing industries and construction	52.83	62.64	30.84	53.66	43.33	–18.0	–19.3	2.1	2.0
A3. Transport	331.45	581.89	557.57	634.82	662.75	100.0	4.4	12.9	30.3
A4. and A5. Other	267.55	305.16	135.79	153.26	134.29	–49.8	–12.4	10.4	6.1
B. Fugitive emissions from fuels	NO	NO	NO	NO	NO	–	–	–	–
C. CO <sub>2</sub> transport and storage	NO	NO	NO	NO	NO	–	–	–	–
2. IPPU	7.78	14.99	174.48	375.79	418.36	5 277.1	11.3	0.3	19.1
3. Agriculture	76.45	77.67	68.04	64.80	65.46	–14.4	1.0	3.0	3.0
4. LULUCF	3.80	3.84	2.45	4.11	4.34	14.3	5.7	NA	NA
5. Waste	68.79	139.81	149.21	155.15	163.86	138.2	5.6	2.7	7.5
6. Other <sup>a</sup>	NA	NA	NA	0.00	0.00	–	–	–	0.0
<i>Gas<sup>b</sup></i>									
CO <sub>2</sub>	2 408.46	2 545.52	2 581.76	1 553.00	1 531.58	–36.4	–1.4	93.7	70.1
CH <sub>4</sub>	105.29	174.65	180.44	190.85	199.85	89.8	4.7	4.1	9.1
N <sub>2</sub> O	56.61	61.43	52.51	42.19	42.77	–24.5	1.4	2.2	2.0
HFCs	IE, NA, NE, NO	6.70	167.60	369.16	411.61	–	11.5	–	18.8
PFCs	NO, NA	NO, NA	0.00	0.00	0.00	–	0.0	–	0.0
SF <sub>6</sub>	0.01	1.47	1.79	0.99	0.30	2 709.7	–69.8	0.0	0.0
NF <sub>3</sub>	NA, NO	NA, NO	NA, NO	NO, NA	NO, NA	–	–	–	–
<b>Total GHG emissions excluding LULUCF</b>	<b>2 570.37</b>	<b>2 789.77</b>	<b>2 984.08</b>	<b>2 156.18</b>	<b>2 186.11</b>	<b>–14.9</b>	<b>1.4</b>	<b>100.0</b>	<b>100.0</b>
<b>Total GHG emissions including LULUCF</b>	<b>2 574.17</b>	<b>2 793.61</b>	<b>2 986.53</b>	<b>2 160.29</b>	<b>2 190.45</b>	<b>–14.9</b>	<b>1.4</b>	<b>NA</b>	<b>NA</b>

Source: GHG emission data: Malta's 2020 annual submission, version 2.

<sup>a</sup> Emissions and removals reported under the sector other (sector 6) are not included in the total GHG emissions.

<sup>b</sup> Emissions by gas without LULUCF. The Party did not report indirect CO<sub>2</sub> emissions.

10. In brief, Malta's national inventory arrangements were established in accordance with legal notice 259 of 2015 (subsidiary legislation 543.01) on the national system for the estimation of anthropogenic GHG emissions by sources and removal by sinks. This notice identifies the Minister for the Environment, Sustainable Development and Climate Change as the single national entity with overall responsibility for the national inventory system and provides for the designation of an inventory agency responsible for inventory preparation. The inventory agency is currently the Malta Resources Authority, which is responsible for planning, preparing and managing the national GHG inventory. The changes in these arrangements since the BR3 include the adoption by the Malta Resources Authority of a quality management system for the preparation and submission of its GHG inventories, as well as International Organization for Standardization 9001 certification of that system.

## 2. Assessment of adherence to the reporting guidelines

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

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

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

12. For Malta the Convention entered into force on 15 June 1994, and Malta ratified the Kyoto Protocol in 2001 as a Party not included in Annex I to the Convention, without immediately taking on any quantified emission limitation or reduction obligations. Malta's accession to the EU in 2004 meant that EU legislation relating to climate action became immediately applicable to Malta. Malta's 2009 application to become a Party included in Annex I to the Convention was approved by the Conference of the Parties at its sixteenth session (2010). Malta became an integral part of the collective commitments of the EU for the second commitment period under the Doha Amendment to the Kyoto Protocol and is committed to contributing to the achievement of the joint EU economy-wide emission reduction target of 20 per cent below the 1990 level by 2020.

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

14. The EU 2020 climate and energy package includes the EU ETS and the ESD (see paras. 24–25 below). The EU ETS covers mainly point emissions sources in the energy, industry and aviation sectors. An EU-wide emission cap has been put in place for 2013–2020 with the goal of reducing emissions by 21 per cent below the 2005 level by 2020. Emissions from ESD sectors are regulated through member State specific targets that add up to a reduction at the EU level of 10 per cent below the 2005 level by 2020.

15. The European Commission set out its vision for a climate-neutral EU in November 2018, and in December 2019 presented the European Green Deal as a road map with actions for making the EU economy sustainable. The European Council endorsed in December 2019 the objective of making the EU climate-neutral by 2050. As part of the European Green Deal, the Commission proposed in March 2020 to enshrine the 2050 climate-neutrality target into the first European Climate Law. The European Green Deal calls for increased ambition in the 2030 emission reduction target to at least 50 per cent below the 1990 level. Member States will set out any increased ambition in the update of their NECPs.

16. Malta has a national target of limiting its emission growth to 5 per cent above the 2005 level by 2020 for sectors under the ESD. This target has been translated into binding quantified AEAs for 2013–2020. Malta's AEAs change following a linear path from 1,168.51 kt CO<sub>2</sub> eq in 2013 to 1,171.95 kt CO<sub>2</sub> eq in 2020.<sup>4</sup>

17. In the event that the national target cannot be domestically maintained within the limits set by the AEAs, Malta may use the flexibility mechanisms available under the ESD to meet its target: namely, utilization of AEAs acquired from other member States and annual use of international credits from project activities up to a quantity equal to 3 per cent of the 2005 level for GHG emissions for sectors under the ESD.

### **2. Assessment of adherence to the reporting guidelines**

18. The ERT assessed the information reported in the BR4 of Malta and recognized that the reporting is complete, transparent and thus adhering to the UNFCCC reporting guidelines

<sup>4</sup> European Commission decision 2017/1471 amended decision 2013/162/EU to revise member States' AEAs for 2017–2020.

on BRs. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

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

### **1. Mitigation actions and their effects**

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

19. Malta provided information on its package of PaMs implemented, adopted and planned, by sector and by gas, in order to fulfil its commitments under the Convention. Malta reported on its policy context and legal and institutional arrangements in place for implementing its commitments and monitoring and evaluating the effectiveness of its PaMs.

20. Malta significantly improved its reporting on PaMs by providing information on 38 PaMs not previously reported. Malta also provided information on its institutional legal, administrative and procedural arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of progress towards its target. However, some changes in Malta's domestic institutional arrangements since the previous submission were not clearly reported. The ERT noted that that the Party could enhance the transparency of its reporting by providing a diagram illustrating the various institutions involved in the domestic institutional arrangements and their roles.

21. In its reporting on its PaMs, Malta provided the estimated emission reduction impacts for some of its PaMs. Malta's quantified PaMs are mainly in the energy, transport and waste sectors, with one policy or measure and the estimated impact reported for the IPPU and agriculture sectors. Malta reported "NE" in CTF table 3 to indicate when the impacts of PaMs were not estimated and supplied an explanation applicable to all PaMs. The ERT noted that the transparency of reporting could be improved by including an estimate of impacts for all PaMs or an explanation specific to each instance where an impact is not provided.

22. The key overarching related cross-sectoral policy in the EU is the 2020 climate and energy package, adopted in 2009, which includes the revised EU ETS and the ESD. The package is supplemented by renewable energy and energy efficiency legislation, legislative proposals on the 2020 targets for CO<sub>2</sub> emissions from cars and vans, the carbon capture and storage directive, and the general programmes for environmental conservation, namely the 7th Environment Action Programme, the clean air policy package, the EU MRV regulation (regulation 2015/757), the EU regulation on F-gases (regulation 2006/842/EC) and the EU directive on nitrates (directive 91/676/EEC). The 2030 climate and energy framework, adopted in 2014, includes more ambitious targets that will be updated as part of the European Green Deal.

23. The achievement of the Energy Union objectives and targets is ensured through a combination of Energy Union initiatives and national policies set out in integrated NECPs. The NECPs are periodically updated to reflect changes to EU policy, such as the implementation of the European Green Deal. Malta's NECP is being implemented by the IMSC-NECP. A high-level political representative from each relevant ministry sits on the IMSC-NECP, which has two technical working groups: one on energy modelling and the other on non-energy climate-related modelling. These working groups are tasked with providing the relevant quantitative assessments and technical input to the IMSC-NECP. Malta indicated in its BR4 that the IMSC-NECP coordinates policymaking and the implementation of energy and climate action in Malta, complementing the work of the Climate Action Board (established by the Climate Action Act 2015). Together, the IMSC-NECP and the Climate Action Board provide a comprehensive national climate action framework covering all aspects of policy planning, implementation and oversight. The NECP will be periodically updated to reflect changes to the EU policies, such as the implementation of the European Green Deal.

24. In operation since 2005, the EU ETS is a cap-and-trade system that covers all significant energy-intensive installations (mainly large point emissions sources such as



power plants and industrial facilities), which produce 40–45 per cent of the GHG emissions of the EU. It is expected that the EU ETS will guarantee that the 2020 target (a 21 per cent emission reduction below the 2005 level) will be achieved for sectors under the scheme. The third phase of the EU ETS started in 2013 and the system now includes aircraft operations (since 2012) as well as N<sub>2</sub>O emissions from chemical industry, PFC emissions from aluminium production and CO<sub>2</sub> emissions from some industrial processes that were not covered in the previous phases of the EU ETS (since 2013). Auctioning is the default method for allocating allowances; however, harmonized rules for free allocations, based on benchmark values achieved by the most efficient 10 per cent of installations, are still in place as a safeguard for the international competitiveness of industrial sectors at risk of carbon leakage. For 2030, an emission reduction target of 43 per cent below the 2005 level has been set for the EU ETS. For Malta, the EU ETS covers CO<sub>2</sub> emissions from the combustion of fossil fuels in all electricity generation plants currently operating in the country.

25. The ESD became operational in 2013 and covers transport (excluding domestic and international aviation, and international maritime transport), residential and commercial buildings, agriculture and waste, together accounting for 55–60 per cent of the GHG emissions of the EU. The aim of the ESD is to decrease GHG emissions in the EU by 10 per cent below the 2005 level by 2020, and it includes binding annual targets for each member State for 2013–2020. The ESD target for Malta is to limit its emission growth to 5 per cent above the 2005 level by 2020. The EU effort-sharing regulation, successor to the ESD, was adopted in 2018. It sets national emission reduction targets for 2030 ranging from 0 to 40 per cent below the 2005 level, and trajectories with annual limits for 2021–2030, for all member States, and keeps many of the flexibilities of the ESD.

26. In its BR4 Malta highlighted the recent EU-wide mitigation actions that will affect its PaMs in the near future, such as the EU MRV regulation. Since 1 January 2018, large ships (i.e. those over 5,000 gross tonnage) that are loading or unloading cargo or passengers in an EU member State are required to monitor and report their CO<sub>2</sub> emissions and other relevant information such as fuel consumption, distance travelled, time at sea and cargo carried, for each voyage. From 2019, all ships that have performed such activities at a port in the European Economic Area are expected to carry on board a document of compliance, ready for the port authorities of the member State to check for the fulfilment of this obligation. Malta indicates in its BR4 that, although the regulation itself may not directly lead to reductions in emissions from maritime activities, it will provide fundamental information for formulating policies in this area. These policies include GHG emission reduction targets for the shipping sector, and the use of market-based measures in the medium and long term.

27. Malta has introduced national-level policies to achieve its target under the ESD. The ESD covers all GHG emissions not covered by the EU ETS, including non-CO<sub>2</sub> emissions from those power plants that do not fall within the scope of the EU ETS. The key policies reported in the BR4 are the National Renewable Energy Action Plan 2017, the National Energy Efficiency Action Plan 2017, the EU regulation on F-gases, the EU directive on nitrates and the Waste Management Plan for the Maltese Islands – A Resource Management Approach 2014–2020. Based on the impact estimates provided by Malta, the mitigation effect of improving wastewater management is the most significant (45.97 kt CO<sub>2</sub> eq in 2020). Other policies that have delivered significant emission reductions are the control and use of CH<sub>4</sub> in landfills, the increase in renewable energy generation, modal shift in transport, rebate schemes issued by the Government for purchasing PV systems in the residential sector, improved waste management, a feed-in tariff paid per unit of electricity generated by PV systems fed into the national electricity grid and alternative fuels used in transport.

28. Malta indicated in its BR4 that its second most important policy, after the NECP, will be its low-carbon development strategy. This strategy, which looks beyond the 2030 perspective and towards 2050 for both mitigation and adaptation, will be published in 2020 and therefore does not affect the mitigation targets up to 2020. The low-carbon development strategy will identify and plan the implementation of further actions to achieve the emission reduction target. The policy is in the second phase of development: articulating the strategy. The important milestones during this phase include establishing a mechanism for setting sectoral emission mitigation targets, preparing recommendations for sector-specific adaptation and elaborating an integrated low-carbon development strategy for its eventual

consideration and adoption by the Government. The conclusion of this phase, and thus the availability of the final strategy, is expected in late 2020 or early 2021. Table 3 provides a summary of the reported information on the PaMs of Malta.

Table 3

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

<i>Sector</i>	<i>Key PaMs</i>	<i>Estimate of mitigation impact in 2020 (kt CO<sub>2</sub> eq)</i>
Energy	Switch to less carbon-intensive fuels for power plants	463.20
	Efficiency improvements in the energy transformation sector	65.33
Transport	Modal shift from reforms in public transport, which include the operation of a nationwide public road transport system by a private organization under contract to the Government	38.71
Renewable energy	Increase in renewable energy from the scheme to facilitate investment in solar PV farms by households without access to space for installing rooftop PV systems	42.29
	Increase in renewable energy through a rebate scheme issued by the Government for the purchase of PV systems in the residential sector	32.48
IPPU	EU regulation on F-gases	10.37
Agriculture	Mechanical-biological treatment plant (Malta North) for animal waste management	0.45
Waste	Improvement of wastewater management: treatment of wastewater to reduce the amount of untreated wastewater disposed and to generate energy if possible	45.97
	Control and use of CH <sub>4</sub> emissions in landfills	45.14

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

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

29. **Energy supply.** Among the PaMs where the impacts were estimated and reported in CTF table 3, energy supply contributed the largest share of overall emission reductions, as a result of investment in new electricity generation capacity and retrofitting existing oil-fired plants to use natural gas. During the review, Malta explained that a new power plant was commissioned in 2017 that includes a floating liquefied natural gas terminal and storage vessel. Preliminary planning has begun for a pipeline connecting Malta to the European gas supply, with an expected completion date of 2024. Implementation of this set of PaMs to switch to lower-carbon fuels at power plants is estimated to result in GHG emission reductions of 463.20 kt CO<sub>2</sub> eq in 2020.

30. A connection linking Malta to the European electricity grid, to complement the country's existing electricity generation capacity, was achieved in 2015. This has greatly enhanced flexibility when sourcing electricity and improved the efficiency of energy transformation in Malta and is estimated to result in GHG emission reductions of 65.33 kt CO<sub>2</sub> eq in 2020.

31. The combination of new electricity generation capacity, retrofitting of existing capacity and utilization of the connection to the European electricity grid has significantly reduced the emission intensity of electricity generation in Malta from 0.81 kg CO<sub>2</sub>/kWh in 2005 to 0.40 kg CO<sub>2</sub>/kWh in 2018. The ERT noted the progress made by Malta in implementing the electricity supply PaMs and reporting their impacts.

32. **Energy efficiency.** The National Energy Efficiency Action Plan 2017 implemented under the EU energy efficiency directive (directive 2012/27/EU) is the key policy on energy efficiency in Malta; it established a national target of 774 GWh of cumulative energy savings over 2014–2020. The BR4 outlines the four main policies that comprise the plan: the energy efficiency obligation on the national electricity supplier; financing schemes and instruments and fiscal incentives to encourage the adoption of efficient technologies by end users; regulations and voluntary agreements focused on the service and industrial sectors; and the

public sector leading by example. Implementation of these policies is estimated to result in a cumulative end-use energy saving of 934.7 GWh in 2020, exceeding the target.

33. The ERT noted that Malta's CTF table 3 in its BR3 lists one of the PaMs in the energy sector, "energy efficiency measures", as starting in 2006 and having an estimated impact of 18.82 kt CO<sub>2</sub> eq for 2020, but these measures are not listed in CTF table 3 of the BR4. Malta explained during the review that the measure referred to in the BR3 may be viewed as an all-encompassing measure for energy efficiency initiatives, a number of which were also listed individually in the BR3. For the BR4, it was deemed more appropriate to focus on showing the different areas where energy efficiency measures have been, are being, or are planned to be, implemented. Malta indicated that, as its national capacity to evaluate and quantify the mitigation impact of PaMs develops, there may be instances where quantified impacts reported in previous years may no longer be considered relevant or robust.

34. **Energy supply and renewables.** Under the EU renewable energy directive (directive 2009/28/EC) Malta is committed to reaching a 10 per cent renewable energy share in gross final consumption of energy by 2020. The Party expects to reach the target through a combination of RES use within the country and biofuel imports, as well as using statistical transfers in 2020. During the review Malta explained that, as of 2018, the overall share of renewable energy amounted to 7.98 per cent. Data for 2019 were not yet available.

35. During the review Malta provided updates on some of the existing measures in place to reach the 10 per cent renewable energy target, namely (1) a feed-in tariff scheme for electricity generated from PV installations, which promotes and supports the generation of electricity from RES; (2) PV grant schemes that encourage the installation of renewable energy systems for domestic use by enabling households to offset up to 50 per cent of the initial capital investment; (3) a competitive bidding process for PV systems equal to or larger than 1 MW, which provides support for electricity generated from RES in larger systems; and (4) capital grants to promote the installation of solar water heaters and collectors by households.

36. **Residential and commercial sectors.** Among the PaMs on renewable energy, a mechanism established to facilitate investment in solar PV farms by households without access to sufficient space for installing their own PV systems has the highest estimated GHG emission reduction (42.29 kt CO<sub>2</sub> eq) in 2020. The grant scheme for purchasing PV systems, the financial support towards meeting part of the investment costs and the introduction of a feed-in tariff are, together, estimated to result in GHG emission reductions of 21.56 kt CO<sub>2</sub> eq in 2020. In addition, the financial support covering part of the investment costs of installing solar water heaters in the residential sector is estimated to result in GHG emission reductions of 8.32 kt CO<sub>2</sub> eq in 2020.

37. **Transport sector.** The two most important PaMs in the transport sector in terms of their effects on emission reductions are modal shift to public transport and public transport reform, and the biofuels substitution obligation. The description and the estimated impacts of these two PaMs were the same as those reported in the BR3.

38. Progress since submission of the BR3 includes updates to the National Transport Strategy, which has been further developed for the short to medium term through the Transport Master Plan 2025. Several new measures have been implemented: examples include free transport for youths, students and the elderly; infrastructure improvements, including for cycling; support for car-sharing and transport-on-demand schemes; and the provision of a ferry service between towns.

39. Malta also provided updates in the BR4 on the use of biofuels in road transport, including on measures such as the biofuels substitution obligation enacted by subsidiary legislation 545.17. This legislation also sets out the minimum biofuel content to be released to the Maltese inland market by importers of diesel or petrol, which is required to be 10 per cent in 2020.

40. The transport sector also includes aviation and maritime uses of fuels. Regarding international aviation, together with other EU member States Malta has declared a commitment to start implementing the International Civil Aviation Organization's Carbon Offsetting and Reduction Scheme for International Aviation in 2021. The system requires

EU member States to monitor and report annual verified emissions and to offset emissions. The aim is to limit emissions from international aviation to no higher than the 2020 level.

41. Regarding the PaMs in the maritime sector, Malta has joined with other EU member States to implement the EU MRV regulation. From 2019, all ships were expected to be ready for compliance checking regarding the reporting of CO<sub>2</sub> emissions and other relevant information. The ERT noted these developments and that the Party could provide a valuable addition by including updated information on the impacts of these measures (GHG emission reductions) in its next BR.

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

42. **IPPU.** The IPPU sector has a relatively large share of emissions with respect to national totals, and the rate of annual emissions is high. F-gases, especially HFCs from refrigeration and air-conditioning equipment, are the most important GHGs and emission source, respectively.

43. Malta reported that the implementation of the EU regulation on F-gases (517/2014) has continued since the previous submission, with the aim of replacing conventional F-gases with new F-gases that have lower GWP values. The estimated impact for this policy is an emission reduction of 10.37 kt CO<sub>2</sub> eq in 2020. Several new PaMs were reported in CTF table 3 (e.g. labelling of products containing F-gases), with the indication that they were implemented in 2018 and 2019, but estimates of their impacts were not provided. During the review Malta provided detailed information on the progress and status of implementation of these measures. Malta indicated that most of them are related to providing public information and monitoring the market to ensure that proper practices are adopted and explained that it is difficult to estimate the GHG mitigation impact of such measures.

44. **Agriculture.** GHG emissions from the agriculture sector fall within the scope of the ESD; thus, this sector also falls within the scope of Malta's 2020 and 2030 targets under the ESD and EU effort-sharing regulation, respectively. PaMs in agriculture were implemented through two programmes. The first is related to the EU nitrates directive (91/676/EC) and was implemented locally through the Nitrates Action Programme. The second is the Rural Development Programme 2014–2020, which broadly focuses on water, waste and energy; branding and promotion of Maltese produce; sustainable livestock; landscape management; and rural economic development and quality of life.

45. CTF table 3 lists two new PaMs in the agriculture sector focusing on waste management from livestock. In the BR4, Malta describes the implementation of the EU nitrates directive through the Maltese Nitrates Action Programme (starting in 2011), together with several PaMs such as drawing up a code of good agriculture practices, formulating fertilizer plans and carrying out information and communication campaigns on the use of nitrates. These are not listed as implemented, planned or adopted PaMs in either CTF table 3 or appendix 1 to the BR4. During the review Malta provided a list of PaMs with specific reference to the Nitrates Action Programme, namely an annual ban on the application of organic and inorganic fertilizer on land between 15 October and 15 March; a regulation on field storage of livestock manure, such that land application can only take place subject to a maximum limit of 120 days between 16 March and 14 October if the dry matter content is at least 30 per cent; and a ban on land application of slurry. Malta informed the ERT that at present it is not possible to estimate the impact of these PaMs owing to the lack of information on factors such as the timing, amount and duration of fertilizer application.

46. Information on the Rural Development Programme, with details of measures being implemented in Malta, was provided in the BR4. During the review Malta explained that these measures have been adopted locally, but that the mitigation impacts of such measures cannot be quantified because the outcome of such measures cannot be translated into quantifiable parameters. According to Malta, the GHG emissions from these measures (including subsequent changes in agricultural practices) are accounted for in the 'business as usual' scenario.

47. **LULUCF.** The BR4 explains that the contribution from the LULUCF sector to emission reductions is minimal. Under the EU LULUCF regulation (specifically, the 'no debit' rule), Malta has to ensure that GHG emissions from the LULUCF sector are balanced

by an equivalent removal of CO<sub>2</sub> from the atmosphere. The EU LULUCF regulation also sets new rules for the accounting of emissions and removals. Malta mentioned in the BR4 that CO<sub>2</sub> removals for a number of afforestation and woodland conservation activities have not been estimated owing to limited availability of data. During the review Malta provided an update on its progress towards estimating emissions and removals from LULUCF activities. During 2018 and 2019 the Malta Resources Authority participated in a capacity-building project that included providing expert training to local staff on data gathering and methodologies for estimating forest reference levels and emissions and removals from LULUCF activities, and also facilitated discussions between the Malta Resources Authority and relevant stakeholders. In addition to increasing technical know-how, which will help in the continuous improvement of LULUCF inventories and projections, the project also serves as a first step towards better coordination between relevant entities in the exchange of information and data, including identifying proper sources of reliable data, ensuring that data are provided on an ongoing basis and also improving collaboration between local experts and practitioners in LULUCF-related activities. The ERT noted the efforts made by the Party to better understand emissions from the LULUCF sector.

48. **Waste management.** On the basis of the estimates that Malta provided for some of the PaMs in the waste sector, the contributions of PaMs in the waste sector were second only to those in the energy sector. The main PaMs in this sector address solid waste management, wastewater management and waste-to-energy technology. With respect to changes since the previous submission, two new PaMs were provided in CTF table 3. The Waste Management Plan for the Maltese Islands 2014–2020 has an estimated impact of 0.27 kt CO<sub>2</sub> eq in 2020. A new waste-to-energy facility is planned to start in 2023.

49. An important development since the previous submission regarding solid waste management was outlined in the BR4. This was focused on the separation of waste at the source or household level. By the end of 2018 this activity covered all localities in the Maltese Islands (Malta, Gozo and Comino). Food waste and other organic waste are separated from other municipal waste and thus can be directed to existing anaerobic treatment facilities.

**(d) Response measures**

50. Malta reported on its assessment of the economic and social consequences of its response measures. The Party's initiatives aimed at minimizing adverse impacts include providing financial support for the implementation of alternative technologies, adaptation, capacity-building and education (see chap. II.D below). Malta also reported that as an EU member State it is implementing EU-level legislation that is subject to a formal process of impact assessment, including of economic and social impacts.

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

51. The ERT assessed the information reported in the BR4 of Malta and identified an issue relating to transparency and thus adherence to the UNFCCC reporting guidelines on BRs. The finding is described in table 4.

Table 4

**Findings on mitigation actions and their effects from the review of the fourth biennial report of Malta**

No.	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
1	Reporting requirement specified in paragraph 6  Issue type: transparency  Assessment: recommendation	Several PaMs described in the report text are not reported in either CTF table 3 or appendix 1 to the BR4: for example, the deployment of a national traffic control centre to manage transport across the whole country and facilitate transit of buses; the controlled vehicle access system in Valetta; and implementation of the EU Rural Development Programme 2014–2020 and the Pan-European Initiative for Free Route Airspace. In addition, Malta had reported in its BR3 that the Near Zero Energy Plan had been developed and was awaiting final approval, and that it would likely provide information in the next BR as to how this plan could supplement existing efforts related to energy efficiency. However, such information is not reported in the BR4. Further, the impact of the measure “Establishment of new mechanical-biological treatment plant in the north of Malta” changed substantially, from 1.79 kt CO <sub>2</sub> eq in the BR3 to 0.45 kt CO <sub>2</sub> eq in the BR4, with no information being provided on this

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation or encouragement
		<p>change. Finally, for certain PaMs (e.g. replacement of appliances in households scheme) information such as the starting year is missing.</p> <p>During the review Malta provided additional information about the PaMs that were mentioned in the textual part of the BR4 but not included in CTF table 3. Malta also explained that the Near Zero Energy Plan is currently a work in progress and at this stage there are no updates to report, but more information should be available in the future.</p> <p>The ERT recommends that Malta ensure that consistent, correct and comprehensive information is provided in the textual part of its next BR and CTF table 3. The ERT noted that Malta should also try to clearly identify new and modified PaMs it has implemented since its previous BR.</p>

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

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

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

52. Malta reported that it does not intend to use units from market-based mechanisms under the Convention to meet its commitment under the ESD. However, Malta reported that it intends to use AEAs purchased from other member States to offset shortfalls in compliance with the ESD targets. It reported in CTF tables 4 and 4(b) that it used units from other market-based mechanisms in 2013–2017, which it identified as internal EU transfers of AEAs for compliance under the ESD. Given that the contribution of LULUCF activities is not included in the joint EU target under the Convention, reporting of contributions of LULUCF activities is not applicable for Malta. Table 5 illustrates Malta's ESD emissions and the use of units from market-based mechanisms to achieve its ESD target.

Table 5

#### Summary of information on the use of units from market-based mechanisms by Malta to achieve its target

Year	ESD emissions (kt CO <sub>2</sub> eq)	AEA (kt CO <sub>2</sub> eq)	Use of units from market-based mechanisms (kt CO <sub>2</sub> eq)	Annual AEA surplus/deficit (kt CO <sub>2</sub> eq) <sup>a</sup>	Cumulative AEA surplus/deficit (kt CO <sub>2</sub> eq)
2013	1 250.78	1 168.51	0	-82.27	-82.27
2014	1 291.39	1 166.79	0	-124.60	-206.87
2015	1 300.74	1 165.06	0	-135.68	-342.55
2016	1 330.00	1 163.33	0	-166.66	-509.21
2017	1 428.48	1 174.52	0	-253.96	-763.17

*Sources:* Malta's BR4 and CTF table 4(b), information provided by the Party during the review and the EU transaction log (AEAs).

<sup>a</sup> A positive number (surplus) indicates that ESD emissions were lower than the AEA, while a negative number (deficit) indicates that ESD emissions were greater than the AEA.

53. In assessing the progress towards achieving the 2020 joint EU target, the ERT noted that Malta's emission reduction target for the ESD is 5 per cent above the base-year (2005) level (see para. 16 above). In 2017, Malta's emissions covered by the ESD were 17.8 per cent (253.96 kt CO<sub>2</sub> eq) above the AEA under the ESD. Taking the use of market-based mechanisms into account, Malta has a cumulative deficit of 763.17 kt CO<sub>2</sub> eq with respect to its AEAs between 2013 and 2017.

54. The ERT noted that Malta is making progress towards its ESD target by implementing mitigation actions that are delivering some emission reductions and by purchasing AEAs from other member States.

55. The ERT noted that Malta faces challenges in implementing mitigation actions that will deliver the emission reductions needed to make sufficient progress towards its target. The ERT also noted that Malta's 2017 emissions were greater than its AEA for that year and Malta is currently running a cumulative AEA deficit with respect to emissions and therefore may face challenges in achieving its ESD target without using market-based mechanisms. The ERT noted that, to achieve its target under the ESD, Malta plans to purchase additional surplus AEAs from EU member States that have overachieved their target under the flexibility allowed under the ESD, which will be sufficient.

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

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

**3. Projections overview, methodology and results**

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

57. Malta reported updated projections for 2020 and 2030 relative to actual inventory data for 2017 under the WEM scenario. The WEM scenario reported by Malta includes implemented and adopted PaMs until 2016.

58. In addition to the WEM scenario, Malta reported the WOM scenario. The WOM scenario excludes all PaMs implemented, adopted or planned after 2016, which is the base year assumed for all sectors. Malta provided a definition of its scenarios, explaining that its WEM scenario includes PaMs such as connecting to the European electricity grid, promoting alternative modes of transport and types of fuels, energy efficiency measures, increasing the use of RES and the uptake of electric cars, promoting transport modal shifts, and implementing the EU regulation on F-gases and waste management plans. The definitions indicate that the scenarios were prepared according to the UNFCCC reporting guidelines on BRs. Malta did not report a WAM scenario in its BR4 because the modelling of all projections is based on PaMs already implemented. Nevertheless, Malta indicated that it is considering presenting WAM projections in a future BR, acknowledging that further capacity-building is required to improve its assessment of the impacts of PaMs, with particular emphasis on the ex ante assessment of planned measures.

59. The projections are presented on a sectoral basis, using the same sectoral categories as those used in the reporting on mitigation actions, and on a gas-by-gas basis for CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, PFCs, HFCs and SF<sub>6</sub> (treating PFCs and HFCs collectively in each case) for 2020, 2025 and 2030. The projections are also provided in an aggregated format for each sector and for a Party total using GWP values from the AR4. Malta reported on factors and activities affecting emissions for each sector.

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

60. The methodology used for the preparation of the projections is quite different from that used for the preparation of the emission projections in the NC7. In particular, for the energy sector, a series of custom models have been developed, while for the other sectors there were methodological improvements (see para. 62 below). However, although information on the current methodology and models is given in the BR4, information is not provided on specific changes that have occurred for each model since the submission of the NC7 regarding the assumptions, methodologies, models and approaches used in the projection scenarios. Malta reported in CTF table 5 the key variables and assumptions used in the preparation of the projection scenarios.

61. To prepare its projections, Malta relied on key underlying assumptions in population, gross value added, gross domestic product (growth rate and constant price), number of households, number of animals, nitrogen input to soil and waste generation. The assumptions were not updated on the basis of the most recent economic developments known at the time

of the preparation of the projections. In some instances, Malta was projecting emissions for 2015 and 2016, implying that for those cases the latest historical data were for 2014.

62. GHG emissions from fuel combustion in the transport and non-transport sectors were projected using numerous models. Models were also used for projecting electricity production from PV sources and the number of heat pumps installed. The GHG emission projections for the agriculture sector were based on the calculation of the nitrogen excretion rates of key livestock species, which ultimately affect the emissions emanating from manure management. The IPPU model was aimed mainly at projecting emissions from refrigeration and air conditioning, based on data for five different subsectors. For projecting GHG emissions from the waste sector, relevant drivers (gross domestic product, population and disposable income) trends between 2013 and 2016 were correlated with the actual trend in waste generation.

63. Malta did not provide in the BR4 a quantitative sensitivity analysis but did qualitatively describe the sensitivity of the projections relative to the agriculture, LULUCF and energy sectors. For agriculture, a simulation exercise was run for the livestock population of different species, leading to a reduction in emissions linked to a reduction of animals. For LULUCF, where the WEM scenario was based on a hypothetical measure, the sensitivity analysis was based on the uncertainty analysis carried out on the estimation of all land-use categories of previous inventories. For the energy sector, the outcomes of the sensitivity analysis were provided as a link to an external publication. The ERT noted that there would be value in providing a sensitivity analysis for the IPPU and waste sectors in future BRs.

64. Emission projections related to fuel sold to ships and aircraft engaged in international transport were not reported separately and included in the totals. Malta did report on factors and activities affecting emissions for each sector.

### (c) Results of projections

65. The projected emission levels under different scenarios and information on the quantified economy-wide emission reduction target are presented in table 6 and figure 1.

66. Malta's total GHG emissions excluding LULUCF in 2020 and 2030 are projected under the WEM scenario to increase by 15.3 and 26.7 per cent, respectively, above the 1990 level. Under the WOM scenario, emissions in 2020 and 2030 are projected to be higher than those in 1990 by 15.7 and 28.6 per cent, respectively.

67. Malta's target under the ESD is to limit its ESD emission growth to 5 per cent above the 2005 level by 2020 (see para. 16 above). Malta's AEAs, which correspond to its national emission target for ESD sectors, change from 1,168.51 kt CO<sub>2</sub> eq in 2013 to 1,171.95 kt CO<sub>2</sub> eq for 2020. The projected level of emissions under the WEM scenario is 25.3 per cent above the AEAs for 2020. The ERT noted that the Party's cumulative deficit of AEAs is 763.17 kt CO<sub>2</sub> eq, which suggests that Malta may need to continue using the flexibility allowed under the ESD to meet its target under the WEM scenario.

Table 6

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

	Total GHG emissions		Emissions under the ESD	
	GHG emissions (kt CO <sub>2</sub> eq per year)	Change in relation to 1990 level (%)	ESD emissions (kt CO <sub>2</sub> eq per year)	Comparison to 2020 AEA (%)
2020 AEA under the ESD <sup>a</sup>	NA	NA	1 171.95	100.0
Inventory data 1990	2 103.18	–	NA	NA
Inventory data 2017	2 151.59	2.3	1 428.48	121.9
WOM projections for 2020	2 434.37	15.7	1 476.79	126.0
WEM projections for 2020	2 425.43	15.3	1 468.14	125.3
WOM projections for 2030	2 703.96	28.6	1 632.19	NA
WEM projections for 2030	2 663.72	26.7	1 592.29	NA

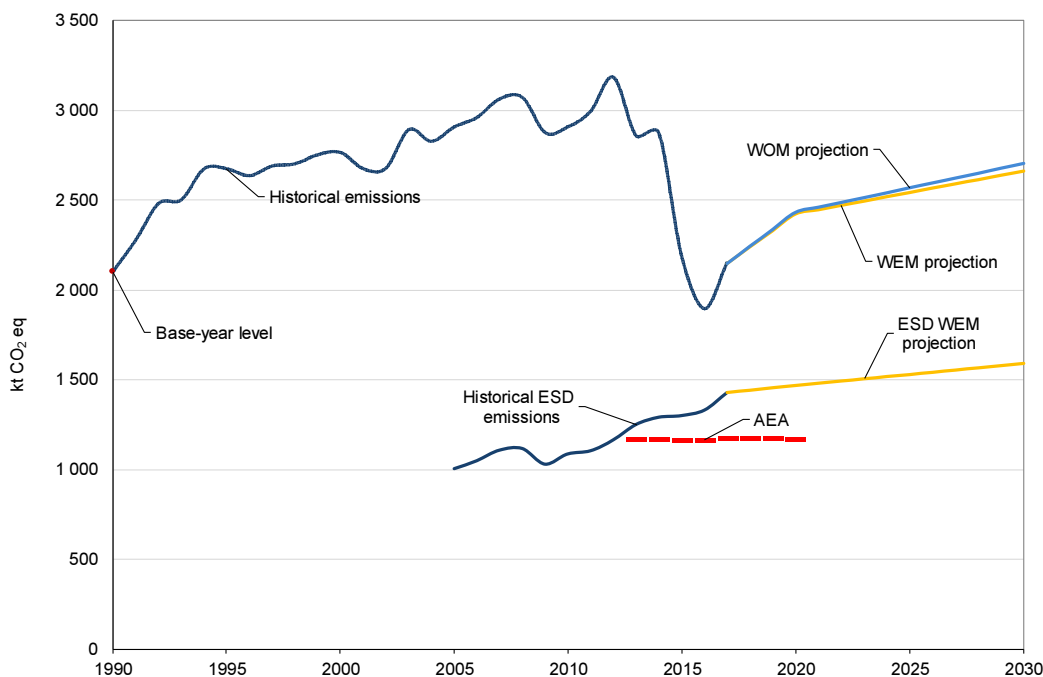
<sup>a</sup>Sources: Malta's BR4 and CTF table 6. ESD emissions and projections data were provided by Malta during the review.

Note: The projections are for GHG emissions excluding LULUCF.



<sup>a</sup> The quantified economy-wide emission reduction target under the Convention is a joint target of the EU and its member States. The target is to reduce emissions by 20 per cent compared with the base-year (1990) level by 2020. Malta's target under the ESD is 5 per cent above the 2005 level by 2020.

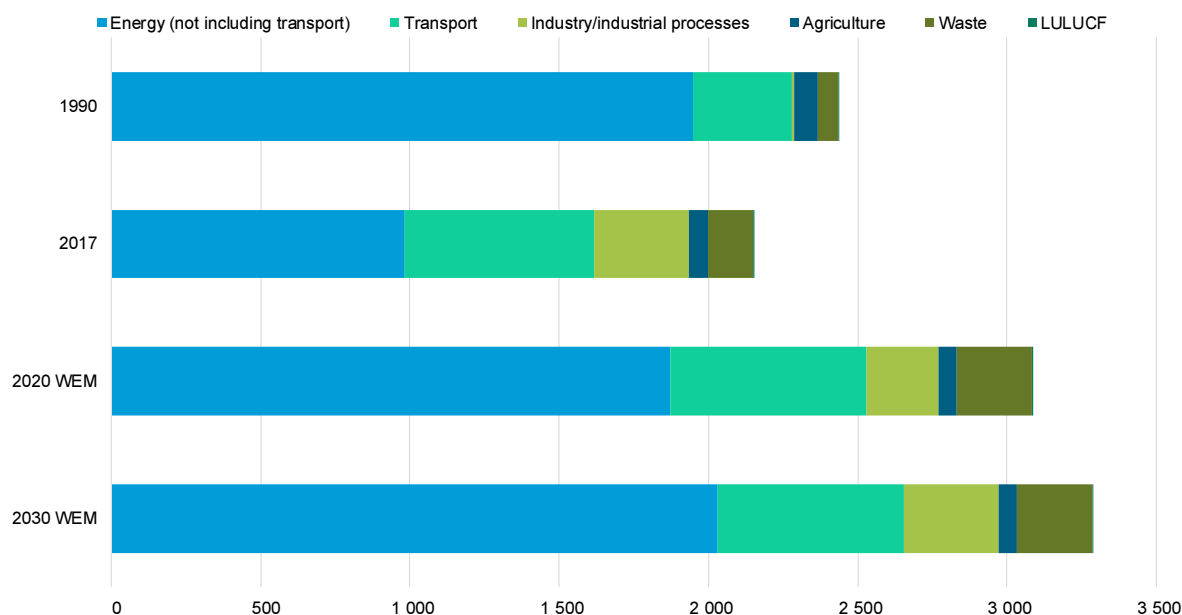
Figure 1  
Greenhouse gas emission projections reported by Malta



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

68. Malta presented the WEM scenarios by sector for 2020 and 2030, as summarized in figure 2 and table 7.

Figure 2  
Greenhouse gas emission projections for Malta presented by sector  
(kt CO<sub>2</sub> eq)



Source: Malta's BR4 CTF table 6.

Table 7

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

Sector	GHG emissions and removals (kt CO <sub>2</sub> eq)			Change (%)	
	1990	2020 WEM	2030 WEM	1990–2020 WEM	1990–2030 WEM
Energy (not including transport)	1 950.00	1 871.27	2 032.98	–4.0	4.3
Transport	330.74	657.70	622.10	98.9	88.1
Industry/industrial processes	7.78	240.18	315.55	2 987.1	3 955.9
Agriculture	76.60	62.14	63.01	–18.9	–17.7
LULUCF	2.96	1.02	0.56	–65.5	–81.1
Waste	68.79	251.90	252.19	266.2	266.6
Other	–	–	–	–	–
<b>Total GHG emissions excluding LULUCF</b>	<b>2 103.18</b>	<b>2 425.43</b>	<b>2 663.72</b>	<b>15.3</b>	<b>26.7</b>

Source: Malta's BR4 CTF table 6.

69. According to the projections reported for 2020 under the WEM scenario, the most significant emission reductions are expected to occur in the LULUCF and agriculture sectors, amounting to projected reductions of 65.5 and 18.9 per cent between 1990 and 2020, respectively. The pattern of projected emissions reported for 2030 under the same scenario remains the same. According to the projections reported for 2030 under the WEM scenario, the most significant emission reductions are also expected to occur in the LULUCF and agriculture sectors, amounting to projected reductions of 81.1 and 17.7 per cent between 1990 and 2030, respectively. However, the ERT noted that the LULUCF sector projections were developed on the basis of scenarios involving hypothetical PaMs that had not been implemented or planned.

70. Malta presented the WEM scenarios by gas for 2020 and 2030, as summarized in table 8.

Table 8

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

Gas	GHG emissions and removals (kt CO <sub>2</sub> eq)			Change (%)	
	1990	2020 WEM	2030 WEM	1990–2020 WEM	1990–2030 WEM
CO <sub>2</sub> <sup>a</sup>	1 943.29	1 872.44	2 033.68	–3.6	4.7
CH <sub>4</sub>	105.27	278.50	279.25	164.6	165.3
N <sub>2</sub> O	54.61	34.31	35.24	–37.2	–35.5
HFCs	–	240.18	315.55	–	–
PFCs	–	–	–	–	–
SF <sub>6</sub>	0.01	–	–	–	–
NF <sub>3</sub>	–	–	–	–	–
<b>Total GHG emissions without LULUCF</b>	<b>2 103.18</b>	<b>2 425.43</b>	<b>2 663.72</b>	<b>15.3</b>	<b>26.7</b>

Source: Malta's BR4 CTF table 6.

<sup>a</sup> Malta did not include indirect CO<sub>2</sub> emissions in its projections.

71. For 2020, the most significant reductions are projected for CO<sub>2</sub> and N<sub>2</sub>O emissions: 20.30 kt CO<sub>2</sub> eq (3.6 per cent) and 70.84 kt CO<sub>2</sub> eq (37.2 per cent) between 1990 and 2020, respectively.

72. Projections for 2030 follow a different trend for CO<sub>2</sub> emissions, which are projected to increase by 90.39 kt CO<sub>2</sub> eq (4.7 per cent) between 1990 and 2030.

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

73. The ERT assessed the information reported in the BR4 of Malta and identified issues relating to completeness, transparency and thus adherence to the UNFCCC reporting guidelines on BRs. The findings are described in table 9.

Table 9

**Findings on greenhouse gas emission projections reported in the fourth biennial report of Malta**

No.	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
1	Reporting requirement specified in paragraph 28  Issue type: completeness  Assessment: encouragement	Malta reported a WEM and a WOM scenario but not a WAM scenario.  During the review Malta explained that further capacity-building is required to improve its assessment of the impacts of PaMs, with particular emphasis on the ex ante assessment of planned measures.  The ERT reiterates the encouragement from the previous review report for Malta to include a WAM scenario in its next BR.
2	Reporting requirement specified in paragraph 29  Issue type: transparency  Assessment: recommendation	Malta developed the projections for LULUCF under the WEM scenario using hypothetical measures.  During the review Malta explained that, for the LULUCF sector, there is a shortage of data in the country and therefore it is a challenge to create realistic scenarios. Malta acknowledges that the model is still in its early stage and needs further improvement.  The ERT recommends that Malta follow the definition of the WEM scenario in the UNFCCC reporting guidelines on NCs (i.e. that the scenarios be based on implemented or adopted measures).
3	Reporting requirement specified in paragraph 36  Issue type: transparency  Assessment: recommendation	The Party does not clearly specify whether emission projections related to fuel sold to ships and aircraft engaged in international transport are reported separately or included in the totals.  During the review Malta explained that fuel sold to aircraft engaged in international aviation counts towards Malta's national energy consumption, while fuel sold to ships engaged in international transport is accounted for under marine bunkering.  The ERT reiterates the recommendation made in previous review reports that Malta provide in its next BR, to the extent possible, the emission projections related to fuel sold to ships and aircraft engaged in international transport separately and not included in the totals.
4	Reporting requirement specified in paragraph 38  Issue type: transparency  Assessment: encouragement	Malta presented its total and sectoral emissions projections for 2015 to 2030 in diagrams without including the historical data.  During the review Malta explained that it was an internal decision to start the projections from 2015.  The ERT encourages Malta to present in its next BR diagrams showing unadjusted inventory data and WEM projections of total GHG emissions starting from 1990 (or another base year, as appropriate) to 2020–2030 (or later).
5	Reporting requirement specified in paragraph 43  Issue type: transparency  Assessment: encouragement	The Party reported in the annexes of its BR4 detailed information on which gases and/or sectors each model or approach used, together with other useful information. However, the strengths and weaknesses of the models or approaches used were not reported for all sectors.  During the review Malta provided further information on the methodologies used for preparing the emission projections including on strengths and weaknesses for some model approaches used.  The ERT encourages the Party to include in the next BR a summary of the strengths and weaknesses of each model or approach used for the various sectors.
6	Reporting requirement specified in paragraph 45  Issue type: completeness  Assessment: encouragement	The Party reported detailed information on the new methodologies used for the projections in its BR4. However, there was no information on the differences between the current methods and the previous ones.  During the review Malta provided further information on the main differences in the assumptions, methods employed (such as the development of new demand- and supply-side models to project data on sectoral energy demand, electricity dispatch, solar PV production, biofuels and road transport), and results between projections in the BR4 and those in the BR3, which illustrated the effort involved in improving its reporting.

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation or encouragement
		The ERT encourages Malta to report in the next BR information on the main differences in the assumptions used, methods employed and results of the projections compared to the previous BR. The ERT noted that this would be particularly useful for the energy and LULUCF sectors.

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

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

74. Malta is not an Annex II Party and is therefore not obliged to adopt measures and fulfil obligations defined in Article 4, paragraphs 3–5, of the Convention. However, Malta provided information in its BR4 on its provision of support to developing country Parties. The ERT commends Malta for reporting this information and suggests that it continue to do so in future BRs.

75. Malta has been providing support since 2013 in the form of financial support totalling EUR 726,694 to developing countries, through both bilateral and multilateral channels, for the implementation of alternative technologies, adaptation, and capacity-building and education. Malta contributed support for a project to provide access to clean water in the Central African Republic. In the areas of education and capacity-building, Malta has provided post-graduate scholarships to students from developing countries for programmes in climate action at the University of Malta.

### **III. Conclusions and recommendations**

76. The ERT conducted a technical review of the information reported in the BR4 and CTF tables of Malta in accordance with the UNFCCC reporting guidelines on BRs. The ERT concludes that the reported information mostly adheres to the UNFCCC reporting guidelines on BRs and provides an overview of emissions and removals related to the Party's quantified economy-wide emission reduction target; assumptions, conditions and methodologies related to the attainment of the target; and the progress of Malta towards achieving its target.

77. Malta's total GHG emissions excluding LULUCF covered by its quantified economy-wide emission reduction target were estimated to be 14.9 per cent below its 1990 level, and total GHG emissions including LULUCF were also 14.9 per cent below its 1990 level, in 2018. Generally, the emissions increased from 1990 to 2012, with small reductions occurring in a few years and a more significant reduction recorded in 2009 owing to the global financial crisis. Emissions reached the highest point in 2012 and decreased thereafter until 2016, mostly as a result of significant changes to electricity generation. Power plant decommissioning, fuel switching and connection to the European electricity grid for importing power also contributed to the decrease in emissions after 2012. However, an increase in local electricity generation since 2016 has resulted in increased emissions.

78. Under the Convention, Malta committed to contributing to the achievement of the joint EU quantified economy-wide emission reduction target of a 20 per cent reduction in emissions below the 1990 level by 2020. The target covers all sectors and CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs and SF<sub>6</sub>, expressed using GWP values from the AR4. Emissions and removals from the LULUCF sector are not included.

79. Under the ESD, Malta has a target of limiting its emission growth to 5 per cent above the 2005 level by 2020. The 2013–2020 progression in Malta's AEAs (its national emission target under the ESD) is 1,168.51–1,171.95 kt CO<sub>2</sub> eq.

80. In 2017, Malta's ESD emissions were 17.8 per cent (253.96 kt CO<sub>2</sub> eq) above the AEA under the ESD. Taking the use of market-based mechanisms into account for 2013–2017, Malta has a cumulative deficit of 763.17 kt CO<sub>2</sub> eq with respect to its AEAs. The ERT

noted that, to achieve its target under the ESD, Malta has purchased and plans to continue to purchase surplus AEAs from EU member States that have overachieved their target, under the flexibility allowed under the ESD, which will be sufficient to cover the cumulative AEA deficit.

81. The GHG emission projections provided by Malta in its BR4 correspond to the WOM and WEM scenarios. Under these scenarios, emissions are projected to be 15.7 and 15.3 per cent above the 1990 level by 2020, respectively. According to the projections under the WEM scenario, ESD emissions are estimated to reach 1,468.14 kt CO<sub>2</sub> eq by 2020. The projected level of emissions under the WEM scenario is 25.3 per cent above the AEAs for 2020. The ERT noted that the Party's cumulative deficit of AEAs through 2017 is 763.17 kt CO<sub>2</sub> eq, and that Malta indicated that it will continue to use the flexibility provided under the ESD to meet its target under the WEM scenario.

82. Malta's main policy framework relating to energy and climate change includes the Climate Action Act 2015 and the NECP. Malta significantly improved its reporting on PaMs by providing information on 38 PaMs not previously reported. The mitigation actions with the most significant impacts are those related to electricity generation (including investment in new and more efficient generating capacity, fuel switching and connection to the European unified electricity grid), improving wastewater management, efficiently managing solid waste and increasing distributed energy generation from renewable sources.

83. Malta is not an Annex II Party and is therefore not obliged to adopt measures and fulfil obligations defined in Article 4, paragraphs 3–5, of the Convention. However, Malta provided information in the BR4 on its provision of support to developing country Parties. Support has been provided for example in the form of scholarships to students from developing countries for programmes at the University of Malta related to climate action, including adaptation, mitigation and governance.

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

- (a) To improve the transparency of its reporting by:
  - (i) Providing information on its PaMs that is consistent across the textual part of the BR and CTF table 3, and that clearly explains new and modified PaMs implemented since the last BR (see issue 1 in table 4);
  - (ii) Following the definition of the WEM scenario in the UNFCCC reporting guidelines on NCs (see issue 2 in table 9);
  - (iii) Providing, to the extent possible, the emission projections related to fuel sold to ships and aircraft engaged in international transport separately and not included in the totals (see issue 3 in table 9);
- (b) To improve the timeliness of its reporting by submitting its next BR on time (see para. 6 above).

## Annex

### Documents and information used during the review

#### A. Reference documents

2019 GHG inventory submission of Malta. Available at <https://unfccc.int/documents/194992>.

2020 GHG inventory submission of Malta. Available at <https://unfccc.int/documents/223649>.

BR3 of Malta. Available at <https://unfccc.int/documents/198880>.

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

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

BR4 CTF tables of Malta. Available at <https://unfccc.int/BRs>.

“Common tabular format for ‘UNFCCC biennial reporting guidelines for developed country Parties’”. Annex to decision 19/CP.18. Available at <https://unfccc.int/resource/docs/2012/cop18/eng/08a03.pdf>.

“Compilation of economy-wide emission reduction targets to be implemented by Parties included in Annex I to the Convention”. FCCC/SBSTA/2014/INF.6. Available at <http://unfccc.int/resource/docs/2014/sbsta/eng/inf06.pdf>.

European Green Deal.

Available at [https://ec.europa.eu/info/files/communication-european-green-deal\\_en](https://ec.europa.eu/info/files/communication-european-green-deal_en).

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

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

“Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention”. Annex to decision 13/CP.20. Available at <http://unfccc.int/resource/docs/2014/cop20/eng/10a03.pdf>.

NECP of Malta. Available at <https://www.energywateragency.gov.mt/2030-necp/>.

Report on the individual review of the annual submission of Malta submitted in 2019. FCCC/ARR/2019/MLT. Available at [https://unfccc.int/sites/default/files/resource/arr2019\\_MLT.pdf](https://unfccc.int/sites/default/files/resource/arr2019_MLT.pdf).

Report on the technical review of the third biennial report of Malta. FCCC/TRR.3/MLT. Available at <https://unfccc.int/documents/183905>.

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

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

Responses to questions during the review were received from Saviour Vassallo (Malta Resources Authority).