



United Nations

FCCC/TRR.4/CYP



Framework Convention on
Climate Change

Distr.: General
2 October 2020

English only


Report on the technical review of the fourth biennial report of Cyprus

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 Cyprus, 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.

GE.20-12923(E)



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Abbreviations and acronyms

AD	activity data
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 ₄	methane
CO ₂	carbon dioxide
CO ₂ eq	carbon dioxide equivalent
CTF	common tabular format
ERT	expert review team
ESD	European Union effort-sharing decision
ESR	European Union effort-sharing regulation
EU	European Union
EU ETS	European Union Emissions Trading System
F-gas	fluorinated gas
GCF	Green Climate Fund
GDP	gross domestic product
GHG	greenhouse gas
GWP	global warming potential
HFC	hydrofluorocarbon
IPPU	industrial processes and product use
LULUCF	land use, land-use change and forestry
NA	not applicable
NC	national communication
NE	not estimated
NECP	National Energy and Climate Plan
NF ₃	nitrogen trifluoride
NO	not occurring
N ₂ O	nitrous oxide
PaMs	policies and measures
PFC	perfluorocarbon
SF ₆	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’

I. Introduction and summary

A. Introduction

1. This is a report on the centralized technical review of the BR4¹ of Cyprus. 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 Cyprus, which provided comments that were considered and incorporated into this final version of the report.

3. The review was conducted together with the review of five other Parties included in Annex I to the Convention from 15 to 19 June 2020 remotely² by the following team of nominated experts from the UNFCCC roster of experts: Nancy Liliana Gamba Cabezas (Colombia), Brian Quirke (Ireland) and Lenka Zetochova (Slovakia). Ms. Gamba Cabezas was the lead reviewer. The review was coordinated by Manuel Estrada and Jamie Howland (secretariat).

B. Summary

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

1. Timeliness

5. The BR4 was submitted on 9 March 2020, after the deadline of 1 January 2020 mandated by decision 2/CP.17. The CTF tables were also submitted on 9 March 2020. The CTF tables and the BR4 were resubmitted on 29 June 2020 to address issues raised during the review. The resubmission included additions to the information on GHG emissions and removals related to the quantified economy-wide reduction target, including a description of the quality assurance/quality control activities that were part of the institutional arrangements included in the most recent annual inventory submission, improvements to consistency between the textual part of the BR and the CTF tables, and additions to the information submitted on PaMs (including the start year of implementation of mitigation actions and their current implementation status). Additionally, the resubmission provided a list of the specific PaMs included for projections of GHG emissions, and information on factors and activities for each sector considered in the projections. Unless otherwise specified, the information and values from the latest submission are used in this report.

6. Cyprus informed the secretariat on 15 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 great concern the delay in the submission and recommended that Cyprus 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 Cyprus in its BR4 mostly adheres to the UNFCCC reporting guidelines on BRs.

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

² Owing to the circumstances related to the coronavirus disease 2019, the technical review of the BR submitted by Cyprus had to be conducted remotely.

Table 1
Summary of completeness and transparency of mandatory information reported by Cyprus 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	Mostly complete	Mostly transparent	Issues 1–2 and 4–5 in table 4 Issues 2–3 in table 9
Provision of support to developing country Parties ^a	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.

^a Cyprus 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. Cyprus provided a summary of information on GHG emission trends for 1990–2017 in its BR4. This summary information is consistent with that reported in the Party’s 2019 annual national GHG inventory submission. Cyprus’s most recent annual national GHG inventory was submitted on 26 May 2020. According to the Party’s 2020 annual submission, total GHG emissions³ excluding emissions and removals from LULUCF increased by 54.8 per cent between 1990 and 2018, whereas total GHG emissions including net emissions or removals from LULUCF increased by 53.8 per cent over the same period. Emissions reached the highest point in 2008, decreased thereafter until 2013, and since 2013 have shown an increasing trend. The changes in total emissions were driven mainly by factors such as the increase in resident population and substantial economic growth (interrupted only between 2008 and 2012 by the global financial crisis), particularly in the tourism sector. These factors have contributed to a considerable increase in energy consumption for electricity and transport, sectors which are predominantly fossil fuel based, and to an increase in the use of F-gases for refrigeration and air conditioning.

9. Table 2 illustrates the emission trends by sector and by gas for Cyprus. Note that information in this paragraph and table 2 is based on Cyprus’s 2020 annual submission, version 5. All emission data in subsequent chapters are based on Cyprus’s BR4 CTF tables unless otherwise noted. The emissions reported in the 2020 annual submission differ from the data reported in CTF table 1 in that the data in CTF table 1 for 1990–2017 are generally slightly higher than the data for the same years in the 2020 annual submission.

³ In this report, the term “total GHG emissions” refers to the aggregated national GHG emissions expressed in terms of CO₂ eq excluding LULUCF, unless otherwise specified.

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

	GHG emissions (kt CO ₂ eq)					Change (%)		Share (%)	
	1990	2000	2010	2017	2018	1990–2018	2017–2018	1990	2018
<i>Sector</i>									
1. Energy	3 972.44	6 379.92	7 501.87	6 591.98	6 479.73	63.1	–1.7	69.8	73.5
A1. Energy industries	1 767.39	2 964.66	3 880.76	3 298.95	3 353.52	86.7	1.7	31.1	38.1
A2. Manufacturing industries and construction	514.80	821.86	700.03	620.79	555.60	20.6	–10.5	9.0	6.3
A3. Transport	1 244.95	1 840.50	2 329.58	2 098.67	2 067.41	68.6	–1.5	21.9	23.5
A4. and A5. Other	444.89	752.15	591.50	573.58	503.21	28.9	11.1	7.8	5.7
B. Fugitive emissions from fuels	0.40	0.75	NO, NE	NO, NE	NO, NE	–	–	0.0	0.0
C. CO ₂ transport and storage	NO	NO	NO	NO	NO	–	–	–	–
2. IPPU	853.25	1 053.93	969.23	1 316.63	1 255.77	54.3	–4.6	15.0	14.3
3. Agriculture	471.41	552.17	531.37	494.24	499.40	4.8	1.0	8.3	5.7
4. LULUCF	–218.97	–35.02	–398.11	–419.22	–399.22	91.5	–4.8	NA	NA
5. Waste	393.34	471.54	515.65	571.54	576.71	45.3	0.9	6.9	6.5
6. Other ^a	0.00	0.00	0.00	0.00	0.00	–	–	0.0	0.0
<i>Gas^b</i>									
CO ₂	4 437.85	7 101.13	7 689.38	7 095.96	6 932.54	56.2	–2.4	78.0	78.7
CH ₄	661.49	799.72	833.04	875.64	885.29	33.8	1.1	11.6	10.0
N ₂ O	292.51	352.49	321.60	295.71	297.26	1.6	0.5	5.1	3.4
HFCs	79.60	169.12	275.84	287.70	297.14	273.3	3.3	1.4	3.4
PFCs	NO	NO	NO	NO	NO	–	–	–	–
SF ₆	0.03	0.08	0.15	0.17	0.17	466.7	0.0	0.0	0.0
NF ₃	NO	NO	NO	NO	NO	–	–	–	–
Total GHG emissions excluding LULUCF	5 690.44	8 457.56	9 518.12	8 974.39	8 811.61	54.8	–1.8	100.0	100.0
Total GHG emissions including LULUCF	5 471.47	8 422.54	9 120.01	8 555.17	8 412.39	53.8	–1.7	NA	NA

Source: GHG emission data: Cyprus's 2020 annual submission, version 5.

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

^b Emissions by gas without LULUCF. The Party did not report indirect CO₂ emissions.

10. In brief, Cyprus's national inventory arrangements were established in accordance with the Council of Ministers' decision of 15 November 2017, "Structure and operation of the national greenhouse gases inventory system: roles and responsibilities". This formal framework assigns the technical and scientific responsibility for compiling the annual inventory for all sectors to an external consultant contracted by the Department of Environment of the Ministry of Agriculture, Rural Development and Environment. The changes in these arrangements since the BR3 include the outsourcing of the estimation of the emissions from products used as substitutes for ozone-depleting substances.

2. Assessment of adherence to the reporting guidelines

11. The ERT assessed the information reported in the BR4 of Cyprus 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 Cyprus the Convention entered into force on 13 January 1998. Under the Convention Cyprus 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 CO₂, CH₄, N₂O, HFCs, PFCs and SF₆ 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. 29–30 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. Cyprus has a national target of reducing its emissions to 5 per cent below the 2005 level by 2020 for sectors under the ESD. This target has been translated into binding quantified AEAs for 2013–2020. Cyprus's AEAs change from 5,919.07 kt CO₂ eq in 2013 to 3,975.25 kt CO₂ eq in 2020.⁴

17. The EU has pledged a nationally determined contribution under the Paris Agreement, which has been adopted by the EU under the 2030 climate and energy framework. The overall emission reduction target is to reduce EU-wide emissions by at least 40 per cent by 2030 compared with the 1990 level, and this target has been broken down to targets at the individual member State level. The national target for Cyprus is to reduce its emissions to 24 per cent below the 2005 level by 2030 for sectors not covered by the EU ETS.

18. The EU LULUCF regulation (regulation 2018/841/EU) of 30 May 2018 sets a binding commitment for 2021–2030 for each member State to ensure that accounted emissions from the LULUCF sector are balanced by an equivalent removal of CO₂ from the atmosphere (known as the 'no-debit' rule). In total, member States may use up to 280,000 kt CO₂ eq worth of LULUCF credits for effort-sharing compliance and can use AEAs to cover LULUCF debits. The allocation for Cyprus is 600 kt CO₂ eq worth of LULUCF credits.

2. Assessment of adherence to the reporting guidelines

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

⁴ 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

20. Cyprus 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. Cyprus 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.

21. Cyprus provided in its BR4 information on a set of PaMs that is different to those previously reported. There are substantially more PaMs reported in CTF table 3 of the BR4 compared with the PaMs reported in the BR3. During the review Cyprus explained that several of the measures presented in the BR4 had been implemented before the submission of its BR3, but information on those measures was not available at the time of the preparation of the BR3. Therefore, this is the first time that all the measures implemented, adopted or planned have been collected and listed.

22. Cyprus also provided information on changes since its previous submission to its institutional, legal, administrative and procedural arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of progress towards its target. A new structure for climate and energy governance has been established by Cyprus for implementing the EU regulation on the governance of the Energy Union and climate action (regulation 2018/1999/EU), in particular to ensure achievement of the 2030 long-term objectives and targets of the Energy Union in line with the Paris Agreement. The Party's new structure of national governance for climate and energy introduces a framework for the preparation of its NECP; its implementation and monitoring; and proposals for revisions. A ministerial committee prepares the NECP and the final decision on the adoption of the NECP is taken by the Council of Ministers.

23. In its reporting on its PaMs, Cyprus did not provide estimated emission reduction impacts for any of its PaMs. During the review the Party explained that the mitigation impacts are not separately available for each mitigation action and that institutional arrangements for assessing mitigation actions and their impacts are currently under preparation through the governance system for climate and energy.

24. In the BR4 (chap. 4.4) the Party presents its national mitigation actions and their impacts under the headings national integrated energy and climate plan, businesses, energy, transport, F-gases, agriculture, waste, and education, training and public awareness. In CTF table 3 mitigation actions are reported under the sectors energy, transport, cross-cutting, industry/industrial processes, agriculture and waste management/waste.

25. Cyprus reported in its BR4 the findings of the impact assessment of its NECP, including options for achieving full compliance with its emission reduction targets. Existing PaMs are insufficient to achieve compliance and, even if they were to be implemented quickly and effectively, planned PaMs are insufficient for reaching Cyprus's GHG emission reduction target of 24 per cent below the 2005 level by 2030 under the ESR. As a result, Cyprus will need to consider purchasing a significant amount of AEAs to fill its compliance gap; implementing stronger emission abatement PaMs (e.g. double the number of energy renovation projects in buildings, and encourage accelerated replacement of conventional cars with electric cars); and adopting fiscally neutral green tax reform with a gradual increase in carbon taxes on all sectors under the ESR. A consultation on the green tax reform is scheduled for 2020, and Cyprus considers this a necessary additional policy for achieving the emission reduction target under the ESR and for enabling its transition to a net zero carbon economy by 2050.

26. The Party did not report on its self-assessment of compliance with its emission reduction targets and national rules for taking action against non-compliance or on progress in establishing national rules for taking local action against domestic non-compliance with emission reduction targets. During the review Cyprus informed the ERT that it plans to provide such information in its next BR.

27. 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 and legislative proposals on the 2020 targets for CO₂ emissions from cars and vans, the carbon capture and storage directive, and the general programmes for environmental conservation, namely the 7th Environment Action Programme and the clean air policy package. The 2030 climate and energy framework, adopted in 2014, includes more ambitious targets that will be updated as part of the European Green Deal.

28. 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. The 2021–2030 EU-wide policies are operationalized through Cyprus's NECP, which details policy priorities and measures in a wide range of economic and development activities. The key policy priorities in Cyprus's NECP include reducing emissions for sectors under the ESR and the EU ETS by 20.9 and 24.9 per cent, respectively, compared with the 2005 level. Emissions from the LULUCF sector are to be offset by at least an equivalent removal of CO₂ from the atmosphere. The Party's energy policies aim for a 23 per cent share of renewable energy in gross final energy consumption by 2030 and for a 13 per cent reduction in final energy consumption by 2030.

29. 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 N₂O emissions from chemical industry, PFC emissions from aluminium production and CO₂ 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.

30. 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 ESR, 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.

31. Cyprus highlighted the EU-wide mitigation actions that are under development, such as preparing legislation following the revised EU ETS directive establishing the framework of the EU ETS for 2021–2030, which entered into force on 8 April 2018. Among the mitigation actions that will have a significant impact on future emissions are those related to the implementation of the EU regulation on the governance of the Energy Union and climate action.

32. Cyprus introduced national-level policies to achieve its targets under the ESD and domestic emission reduction targets. The Party indicated in its BR that most of the PaMs presented were introduced with a view to achieving the national emission reduction target

for 2030 and not that for 2020. Some of these measures (e.g. promoting renewables, energy efficiency and anaerobic digestion for treatment and management of animal waste) were introduced earlier and may contribute towards the achievement of the Party's 2020 national emission reduction target. Cyprus confirmed that it intends to meet its 2020 target through the use of the flexibility mechanisms provided under the ESD.

33. Cyprus highlighted the domestic mitigation actions that are under development, such as a new financial support scheme, known as Business4Climate, that is scheduled to run in 2020–2022 and aims to encourage businesses (outside of the EU ETS) to take steps to reduce their GHG emissions by 8 per cent by 2030. There are currently 64 signatories to this voluntary scheme, which was developed by the Cyprus Employers and Industrialists Federation in collaboration with the Cyprus University of Technology and the Department of Environment of the Ministry of Agriculture, Rural Development and Environment. Table 3 provides a summary of the reported information on the PaMs of Cyprus.

Table 3

Summary of information on policies and measures reported by Cyprus

<i>Sector</i>	<i>Key PaMs</i>	<i>Estimate of mitigation impact in 2020 (kt CO₂ eq)</i>	<i>Estimate of mitigation impact in 2030 (kt CO₂ eq)</i>
Energy			
Transport	Use of vehicles with low or zero emissions	NE	NE
Electricity generation	Use of natural gas for electricity production	NE	NE
Renewable energy	Support scheme for installation of renewable energy systems	NE	NE
Energy efficiency	Promotion of energy efficiency in enterprises, through voluntary agreements under the Business4Climate initiative	NE	NE
	Energy efficiency in electricity infrastructure	NE	NE
	Energy efficiency obligation scheme	NE	NE
	Support schemes for promoting energy efficiency investments in the residential and public sectors	NE	NE
IPPU	Recovery of F-gases (at least 10% under the WAM scenario) by 2030	NE	NE
Agriculture	Promotion of anaerobic digestion for treatment and management of animal waste	NE	NE
Waste	Decrease in organic waste to landfill to 15% by 2021	NE	NE
	Biogas recovery from old solid waste disposal sites	NE	NE
	Promotion of anaerobic digestion for the treatment of the organic fraction of municipal solid waste	NE	NE
Other	Fiscally neutral green tax reform	NE	NE

Note: CTF table 3 did not include estimates of mitigation impact for the mitigation actions listed (see para. 23 above).

34. The number of PaMs provided in the Party's BR4 (in CTF table 3) is significantly larger than in the BR3 (see para. 21 above). The ERT notes, however, that it is difficult to assess the significance of each of the measures because estimates of their impacts were not provided in the BR4. The Party explained during the review that institutional arrangements that enable the impacts of PaMs to be assessed are currently under preparation.

(b) Policies and measures in the energy sector

35. **Energy efficiency.** PaMs that have been implemented and adopted include constructing new nearly zero energy buildings or renovating existing buildings to nearly zero energy standard, with the aim of achieving a cumulative end-use energy saving of 16.5 ktoe. Implementation of this mitigation action began in 2014. Since 2009, Cyprus has had

minimum energy performance requirements for new and existing buildings, as set out in the Energy Performance of Buildings Law (law 142(I)/2006).

36. In terms of planned PaMs, improving energy efficiency is a key objective, particularly in the light of the target of a 13 per cent reduction in final energy consumption for 2021–2030. The Government is proposing a fiscally neutral green tax reform (due for consultation in 2020), which would impose a gradually increasing carbon tax on all sectors not included in the EU ETS and is expected to lead to energy savings. There are also energy efficiency obligation schemes under which energy suppliers must implement energy efficiency projects. These schemes are expected to play a major role in achieving Cyprus's primary energy efficiency target, in addition to its targets for renewable energy share and GHG emission reductions up to 2030. In addition, support schemes have been adopted for promoting energy efficiency investments in the residential and public sectors as well as energy audits in small to medium-sized enterprises, and these schemes will be implemented from 2020 to 2023. They will be operated by the Management Committee of the Renewable Energy and Energy Conservation Fund. From 2021 onward it is expected that the energy consumption fee, which is already implemented and is paid by all consumers of electricity, will be at least EUR 0.008/kWh until 2030 and will contribute to the Renewable Energy and Energy Conservation Fund. Energy efficiency PaMs targeting individual sectors are discussed below.

37. **Energy supply and renewables.** The key measures relevant to electricity production concern the planned switch from oil to natural gas in the power generation sector in 2021 and the development of natural gas network pipeline infrastructure. These measures will also lead to an increase in the energy efficiency of electricity infrastructure. Regarding measures adopted and implemented to enhance renewable energy, the implementation of a support scheme for the installation of renewable energy systems began in 2016. This measure facilitates the installation of commercial photovoltaic systems, wind farms, a solar concentration station, biomass and biogas stations and wave energy systems. In the last call for proposals under this measure, which closed in April 2018, applications were submitted for a total capacity of 392 MW, with 120 MW having been licensed at the time of submission of the BR4. A reannouncement of the scheme occurred at the end of 2018 and approval will be given for more projects. Other measures include the installation of replacement solar water heaters in households from 2004 to 2020. Promoting use of renewable energy is also a priority, with a key objective being to increase the share of renewables in gross final energy consumption to 23 per cent by 2030. This includes increasing the use of renewables for electricity, and for heating and cooling, to 26 and 39 per cent of final energy consumption, respectively, by 2030.

38. **Residential and commercial sectors.** Adopted measures for the period prior to 2020 include those related to energy efficiency and renewables described in paragraphs 35–37 above. Cyprus has adopted schemes for promoting energy efficiency investments in the residential and public sectors. Other measures include the installation of energy-efficient street lighting (implemented from 2018 to 2023); energy efficiency retrofits in selected government and municipal buildings; and information campaigns, training and workshops on energy saving and energy efficiency organized by the Ministry of Energy, Commerce and Industry.

39. **Transport sector.** Key implemented and adopted measures include a tax (introduced in 2014) on road transport fuels exceeding the minimum emission levels as required by the EU directive on taxation of energy products and electricity (directive 2003/96/EC) and a vehicle excise duty based on CO₂ emissions (introduced in 2012). These measures aim to achieve 199.6 and 4.07 ktoe cumulative end-use energy savings, respectively. An integrated fleet management system was introduced in 2017 for approximately 1,800 Government-owned vehicles. It uses vehicle refuelling data to identify and compare vehicles with high fuel consumption so that they can be replaced, where necessary. Increasing the share of renewables in transport fuel (e.g. by replacing a percentage of conventional transport fuels with biofuels) to 14 per cent is a key objective for 2021–2030. Law 100(I)/2013, whereby a tax on vehicles is applied with a view to reducing CO₂ emissions, was amended on 29 March 2019 and promotes the use and purchase of low- and zero-emission vehicles. A vehicle scrappage scheme and financial incentives for the purchase of electric vehicles are scheduled to come into effect in 2020. Other key planned measures include installing charging stations

for electric vehicles, new bus contracts that include electric buses, and using compressed natural gas for buses when the fuel becomes available.

40. **Industrial sector.** In addition to the energy efficiency and renewable energy measures described in paragraphs 35–37 above, the Party described a measure concerning the recovery of F-gases (see para. 41 below).

(c) Policies and measures in other sectors

41. **Industrial processes.** Cyprus has adopted the EU regulation on F-gases through national legislation (laws 62(I)/2016 and 46(I)/2017) and expects to adopt legislation in relation to a producer responsibility scheme. A support scheme for the recovery of F-gases will be put in place in 2021 with the goal of achieving 5 per cent recovery by 2030. There is also a target of at least 10 per cent recovery by 2030 under the WAM scenario.

42. **Agriculture.** Anaerobic digestion for the treatment and management of animal waste is a voluntary measure that is promoted by the Department of Environment. This is facilitated by national legislation, and a financial support scheme is under preparation to provide grants for the recovery of GHGs, which will be in place in 2021.

43. **LULUCF.** The Party indicated in its BR4 that its Rural Development Programme promotes forestry, which also increases sequestration of CO₂, contributing to emission reductions from the LULUCF sector. The Department of Forests is implementing a plan to increase the number of forest trees grown in its nurseries for planting on non-forested lands. The “I Plant for Climate” campaign is aimed at public sector and private organizations. The scheme starts from around 70,000 trees planted in 2020 and aims to reach 300,000 trees planted per year by 2030. The Ministry of Transport, Communications and Works is currently considering an extensive tree planting measure involving the planting of up to 650,000 trees along the urban road network and up to 350,000 trees along the interurban road network.

44. **Waste management.** Cyprus’s National Municipal Waste Management Plan of 2015–2021 contains targets and measures for waste management, including reducing the amount of biodegradable waste disposed to landfill. Implemented measures reported in the BR4 include the construction of a mechanical-biological treatment unit for separating recycled and biodegradable material, the Green Points Network (22 collection points for various household waste streams), a system for the separate collection of packaging waste from households and the completion of restoration works for a number of old unauthorized landfills. Key measures planned for reducing GHGs include reducing the amount of solid waste disposed to landfill (40 per cent of total waste from 2021, 55 per cent in 2025, 60 per cent in 2030), reducing the amount of organic waste disposed to landfill to 15 per cent by 2021, introducing anaerobic digestion for the treatment of organic waste, and biogas recovery from old landfills (20 per cent from deep unmanaged landfills) during their restoration.

(d) Response measures

45. Cyprus reported on its assessment of the economic and social consequences of its response measures at the national level within the framework of its NECP. The NECP aims to lead to net economic benefits to society by 2030, such as a reduction in the use of passenger cars and a slight increase in GDP and employment rates, and also includes a fiscally neutral green tax reform. Cyprus described in its BR4 financial, technological and capacity-building support provided to developing country Parties, including its contribution to the GCF and an initiative for a regional action plan to address the specific needs and challenges faced by countries in the Eastern Mediterranean and the Middle East that are particularly vulnerable to the impacts of climate change (see para. 69 below). Further initiatives aimed at minimizing adverse impacts, as detailed in the Party’s 2019 annual submission, include the progressive reduction or phasing out of market imperfections, and the use of fiscal incentives, tax and duty exemptions and subsidies in all GHG-emitting sectors, taking into account the need for energy price reforms to reflect market prices and externalities; cooperation in the development, diffusion and transfer of advanced fossil-fuel technologies that emit a lower level of GHGs or that capture and store GHGs, and encouraging their wider use; and facilitating the participation of the least developed countries and other Parties not included in Annex I to the Convention in these initiatives.

(e) Assessment of adherence to the reporting guidelines

46. The ERT assessed the information reported in the BR4 of Cyprus and identified issues relating to completeness, transparency and thus adherence to the UNFCCC reporting guidelines on BRs. The findings are described in table 4.

Table 4

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

No.	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
1	<p>Reporting requirement specified in paragraph 6</p> <p>Issue type: transparency</p> <p>Assessment: recommendation</p>	<p>In its BR4 the Party reported on the PaMs it has implemented or plans to implement. However, it is not clear which of the PaMs are the same as those reported in the BR3 and which ones are new. In addition, there are inconsistencies in the reporting of PaMs between the textual part of the BR4 and CTF table 3 as different sector headings were used.</p> <p>During the review Cyprus explained that several of the measures presented in the BR4 had been implemented before the submission of the BR3, but information on those measures was not available at the time of the preparation of the BR3. Therefore, this is the first time that all the measures implemented, adopted or planned have been collected and listed.</p> <p>Cyprus also explained that the measures reported under the headings businesses, F-gases, and education, training and public awareness are included in CTF table 3 under the sectors energy and waste management/waste, industry/industrial processes, and cross-cutting, respectively.</p> <p>The ERT recommends that Cyprus improve the transparency of its reporting by clearly identifying which PaMs it has implemented or plans to implement to achieve its economy-wide emission reduction target and indicate any changes since its last NC or BR, and by reporting, to the extent possible, mitigation actions by sector (energy, IPPU, agriculture, LULUCF, waste and other) and by gas (CO₂, CH₄, N₂O, HFCs, PFCs and SF₆) in a consistent manner between the BR and CTF table 3.</p>
2	<p>Reporting requirement specified in paragraph 7</p> <p>Issue type: transparency</p> <p>Assessment: recommendation</p>	<p>The Party reported information in its BR4 on changes to its domestic institutional arrangements since its previous submission, including its new structure for climate and energy governance established for implementing the EU regulation on the governance of the Energy Union and climate action (regulation 2018/1999/EU), in particular to ensure the achievement of the 2030 long-term objectives and targets of the Energy Union in line with the Paris Agreement. This includes the proposal of Cyprus's NECP, its implementation and monitoring, and proposals for revisions.</p> <p>However, it is not clear from the BR4 whether these new arrangements are applicable to the institutional arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of the progress towards its economy-wide emission reduction target.</p> <p>During the review the Party explained that these changes do apply to the domestic institutional arrangements concerning domestic compliance, monitoring, reporting, archiving of information and evaluation of the progress towards its economy-wide emission reduction target.</p> <p>The ERT recommends that Cyprus improve the transparency of its reporting by clearly identifying any changes in its domestic institutional arrangements, including institutional, legal, administrative and procedural arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of the progress towards its economy-wide emission reduction target.</p>
3	<p>Reporting requirement specified in paragraph 8</p> <p>Issue type: transparency</p> <p>Assessment: encouragement</p>	<p>The BR4 includes a description of the economic and social consequences of response measures, focusing on the impacts of the NECP. Cyprus also refers to the financial, technological and capacity-building support it provides to developing country Parties in chapter 6 of its BR4. However, the Party did not allude to the additional efforts for assessing the economic and social consequences of response measures which were reported in both the 2019 and 2020 national inventory reports.</p>

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation or encouragement
4	Reporting requirement specified in CTF table 3 Issue type: transparency Assessment: recommendation	<p>The ERT encourages Cyprus to improve the transparency of its reporting by providing, to the extent possible, detailed information on the assessment of the economic and social consequences of response measures, including the information provided in its annual national inventory submission.</p> <p>The ERT noted that in CTF table 3, a number of mitigation actions with a status of implementation of “implemented” have a start date of implementation that is in the future. In addition, the name of the implementing entity or entities was not clearly stated for all of the PaMs reported.</p> <p>During the review, the Party explained that actions with a future start date of implementation should have been reported as “planned”. Cyprus also provided the period of implementation for a number of the mitigation actions and clarified the names of those implementing entities where only the acronym had been provided in CTF table 3, although some of the mitigation actions were still missing the names of the implementing entities.</p> <p>The ERT recommends that Cyprus improve the transparency of its reporting by providing the correct status of implementation for all of the mitigation actions listed in CTF table 3 in its next submission and by clearly reporting the names of the implementing entities.</p>
5	Reporting requirement specified in CTF table 3 Issue type: completeness Assessment: recommendation	<p>The ERT noted that Cyprus did not provide estimated emission reduction impacts for any of its PaMs.</p> <p>During the review, the Party explained that mitigation impacts were not available as separate estimates for each mitigation action and that institutional arrangements for assessing mitigation actions and their impacts were currently being prepared through the governance system for climate and energy.</p> <p>The ERT recommends that Cyprus improve the completeness of its reporting by providing the estimated mitigation impacts of its PaMs or by clearly explaining why this may not be possible owing to its national circumstances.</p>
6	Reporting requirement specified in paragraph 24 Issue type: completeness Assessment: encouragement	<p>Cyprus did not report on its self-assessment of compliance with its emission reduction targets and national rules for taking action against non-compliance or on progress in establishing national rules for taking local action against domestic non-compliance with emission reduction targets.</p> <p>During the review Cyprus informed the ERT that it plans to provide this information in its next BR.</p> <p>The ERT encourages Cyprus to report, to the extent possible, on the domestic arrangements established for the process of the self-assessment of compliance with emission reduction targets in comparison with emission reduction commitments or the level of emission reduction that is required by science and on its progress in establishing national rules for taking local action against domestic non-compliance with emission reduction targets.</p>

Note: Item listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on BRs or to the CTF table number from the “Common tabular format for ‘UNFCCC biennial reporting guidelines for developed country Parties’”. 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

47. Cyprus reported that it does not intend to use units from market-based mechanisms under the Kyoto Protocol and other market-based mechanisms under the Convention to meet its commitment under the ESD. It reported in CTF tables 4 and 4(b) that it did not use any units from market-based mechanisms in 2016 or 2017. 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 Cyprus. Table 5 illustrates Cyprus’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 Cyprus to achieve its target

<i>Year</i>	<i>ESD emissions (kt CO₂ eq)</i>	<i>AEA (kt CO₂ eq)</i>	<i>Use of units from market-based mechanisms (kt CO₂ eq)^a</i>	<i>Annual AEA surplus/deficit (kt CO₂ eq)^b</i>	<i>Cumulative AEA surplus/deficit (kt CO₂ eq)</i>
2013	3 938.12	5 919.07	NA	1 980.95	1 980.95
2014	3 924.86	5 922.55	NA	1 997.69	3 978.64
2015	4 060.62	5 926.04	NA	1 865.42	5 844.06
2016	4 111.44	5 929.52	NA	1 818.08	7 662.14
2017	4 270.89	4 196.63	NA	-74.26	7 587.88
2018	NA	4 122.84	NA	NA	NA

Sources: Cyprus's BR4 and CTF table 4(b) and information provided by the Party during the review.

^a The use of "NA" indicates that the Party stated in its BR that it does not intend to use market-based mechanisms to achieve its target.

^b 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.

48. In assessing the progress towards achieving the 2020 joint EU target, the ERT noted that Cyprus's emission reduction target for the ESD is 5 per cent below the base-year level (see para. 16 above). In 2017, Cyprus's emissions covered by the ESD were 1.8 per cent (74.26 kt CO₂ eq) above the AEA under the ESD. Cyprus has a cumulative surplus of 7,587.88 kt CO₂ eq with respect to its AEAs between 2013 and 2017. Cyprus has not used market-based mechanisms so far.

49. The ERT noted that Cyprus 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 Cyprus's 2017 emissions under the ESD were greater than its AEA for that year. However, for the same year, Cyprus had a cumulative AEA surplus with respect to ESD emissions. Cyprus informed the ERT during the review of its intention to use the flexibility mechanisms provided under the ESD to meet the ESD target for 2020, which allows Parties to carry over their own surplus and use it in subsequent years.

(b) Assessment of adherence to the reporting guidelines

50. The ERT assessed the information reported in the BR4 of Cyprus 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

51. Cyprus reported updated projections for 2020 and 2030 relative to actual inventory data for 2017 under the WEM scenario. The WEM scenario reported by Cyprus includes implemented and adopted PaMs until 2019.

52. In addition to the WEM scenario, Cyprus reported the WAM scenario, which includes planned PaMs; a 'without measures' scenario was excluded during the resubmission. Cyprus provided a definition of its scenarios, explaining that the PaMs for the WEM and WAM scenarios are described in its NECP. The WEM scenario includes PaMs such as use of natural gas for electricity production and reducing the quantities of biodegradable waste in solid waste treatment facilities, while in the WAM scenario, new or improved PaMs are added, such as increasing the use of cars with low or no GHG emissions. The definitions indicate that the scenarios were prepared according to the UNFCCC reporting guidelines on BRs.

53. 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 CO₂, CH₄, N₂O, PFCs, HFCs and SF₆ (treating PFCs and HFCs collectively in each case) for 2020 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. Cyprus reported on factors and activities affecting emissions for each sector, apart from the LULUCF sector, for which no PaMs were included in the projections. For this reason, the WEM and WAM scenarios do not include emissions or removals from the LULUCF sector.

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

54. The methodology used for the preparation of the projections is identical to that used for the preparation of the emission projections for the NC7. Cyprus provided information on the changes since the submission of its NC7 in the assumptions, methodologies, models and approaches used in the projection scenarios. The difference between the projections in the NC7 and those in the BR4 is due to different PaMs being reported in the BR4, where all the measures implemented, adopted or planned were collected and listed following the preparation of Cyprus's NECP (see para. 21 above). In particular, the energy projections are the result of a model described in the NECP, whereby data from the Open Source Energy Modelling System were inputs for other spreadsheet models used for estimating GHG emissions, while the agriculture sector projections were reliant on expert judgment provided by the Department of Agriculture. In addition, where AD were not available, the Party used GDP or the same data it reported for the previous inventory year. Cyprus reported in CTF table 5 the key variables and assumptions used in the preparation of the projection scenarios.

55. To prepare its projections, Cyprus relied on key underlying assumptions relating to population (projected to be 0.910 million in 2020 and 0.934 million in 2030), GDP (EUR 21,754 million in 2020 and EUR 27,173 million in 2030), number of passengers using public transport, private cars or the railway network, number of households, international fuel prices and the EU ETS carbon price, among others. Detailed information about the key variables and assumptions used in the preparation of the projection scenarios was provided during the review and can be found in the annexes to the Party's NECP. The assumptions were updated on the basis of the most recent economic developments known at the time of the preparation of the projections. The assumptions were not reported in CTF table 5, but during the review Cyprus provided a list of parameters and variables used for the preparation of its NECP.

56. Cyprus did not provide information on sensitivity analyses. During the review the Party confirmed that sensitivity analyses were not prepared.

(c) Results of projections

57. 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.

Table 6

Summary of greenhouse gas emission projections for Cyprus

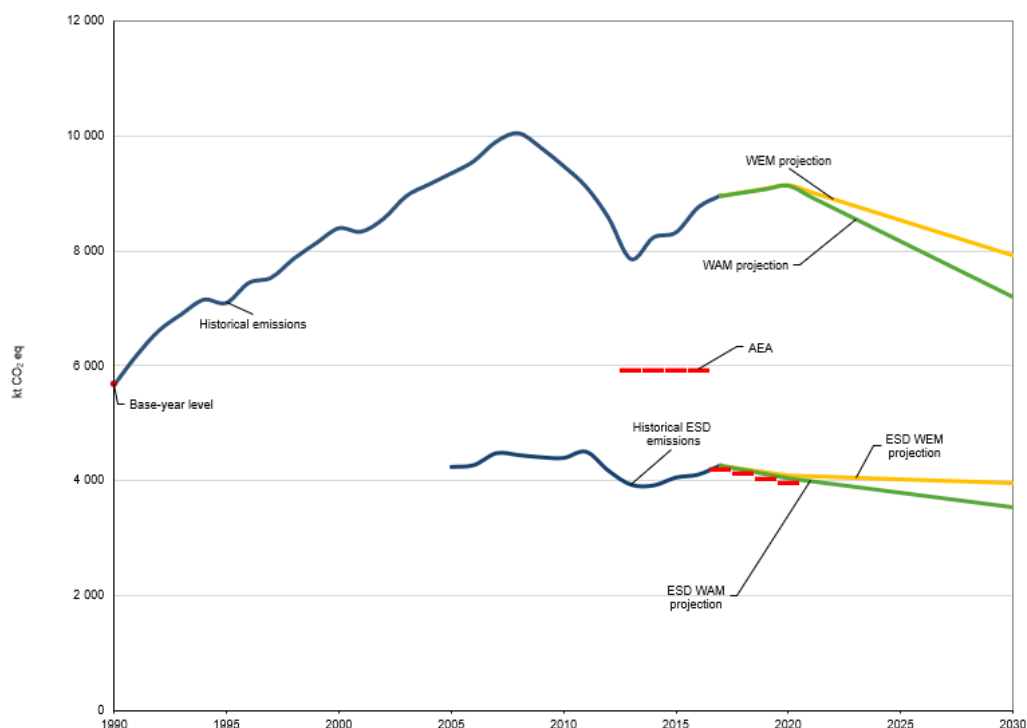
	<i>Total GHG emissions</i>		<i>Emissions under the ESD</i>	
	<i>GHG emissions (kt CO₂ eq per year)</i>	<i>Change in relation to 1990 level (%)</i>	<i>ESD emissions (kt CO₂ eq per year)</i>	<i>Comparison to 2020 AEA (%)</i>
2020 AEA under the ESD ^a	NA	NA	3 975.25	100.0
Inventory data 1990	5 668.92	–	NA	NA
Inventory data 2017	8 963.24	58.1	4 270.89	7.4
WEM projections for 2020	9 192.40	61.4	4 097.00	3.1
WAM projections for 2020	9 145.94	61.3	4 052.00	1.9
WEM projections for 2030	7 867.33	39.9	3 959.00	NA
WAM projections for 2030	7 187.48	26.8	3 546.00	NA

Source: Cyprus's BR4 and CTF table 6. ESD emissions and projections data were provided by Cyprus during the review and in its resubmission.

Note: The projections are for GHG emissions excluding LULUCF and excluding indirect CO₂.

^a 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. Cyprus's target under the ESD is 5 per cent below the 2005 level by 2020.

Figure 1
Greenhouse gas emission projections reported by Cyprus



Sources: EU transaction log (AEAs) and Cyprus's BR4 and CTF tables 1 and 6.

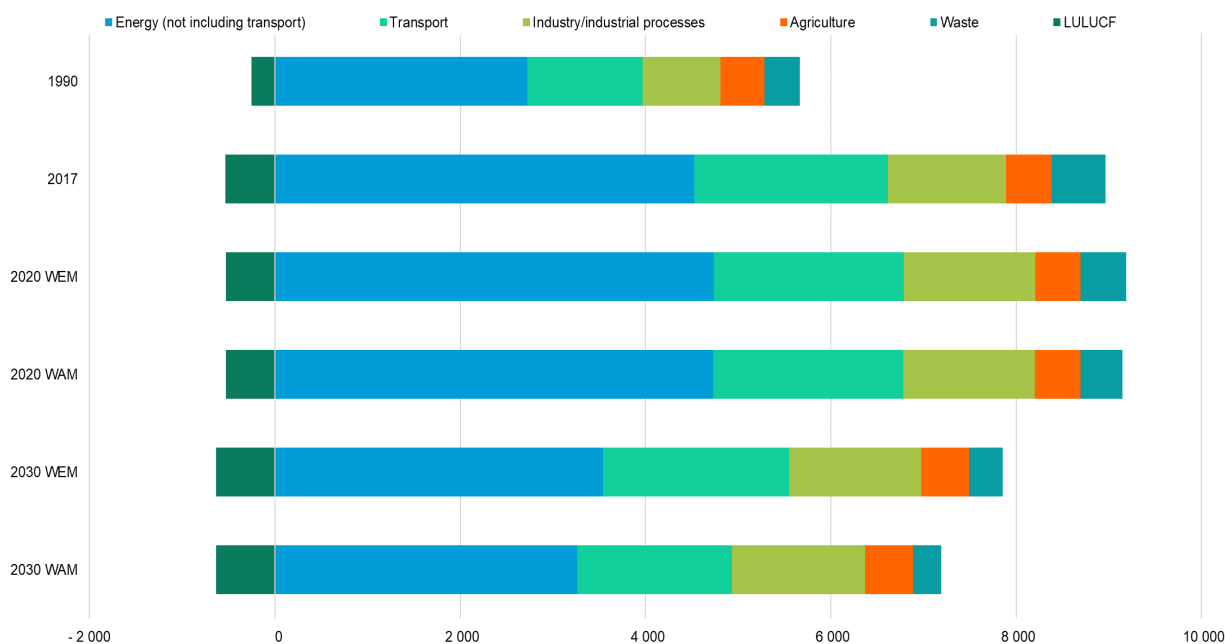
58. Cyprus's total GHG emissions excluding LULUCF in 2020 and 2030 are projected under the WEM scenario to increase by 61.4 and 39.9 per cent, respectively, compared with the 1990 level. Under the WAM scenario, emissions in 2020 and 2030 are projected to be higher than those in 1990 by 61.3 and 26.8 per cent, respectively.

59. Cyprus's target under the ESD is to reduce ESD emissions by 5 per cent below the 2005 level by 2020 (see para. 16 above). Cyprus's AEAs, which correspond to its national emission target for ESD sectors, change from 5,919.07 kt CO₂ eq in 2013 to 3,975.25 kt CO₂ eq for 2020. The projected level of emissions under the WEM and WAM scenarios is 3.1 and 1.9 per cent, respectively, above the AEAs for 2020. During the review the Party explained that the national target for 2020 will be met by using the flexibility mechanisms under the ESD.

60. In addition to its target under the ESD, the EU pledged a nationally determined contribution under the Paris Agreement, which has been adopted by the EU under the 2030 climate and energy framework (see para. 17 above). The national target for Cyprus is to reduce its emissions to 24 per cent below the 2005 level by 2030 for sectors not covered by the EU ETS.

61. Cyprus presented the WEM and WAM scenarios by sector for 2020 and 2030, as summarized in figure 2 and table 7.

Figure 2
Greenhouse gas emission projections for Cyprus presented by sector
 (kt CO₂ eq)



Source: Cyprus's BR4 CTF table 6.

Table 7
Summary of greenhouse gas emission projections for Cyprus presented by sector

Sector	GHG emissions and removals (kt CO ₂ eq)					Change (%)			
	1990	2020		2030		1990–2020		1990–2030	
		WEM	WAM	WEM	WAM	WEM	WAM	WEM	WAM
Energy (not including transport)	2 727.27	4 736.00	4 733.00	3 539.00	3 263.00	73.7	73.5	29.8	19.6
Transport	1 242.49	2 051.00	2 051.00	2 010.00	1 668.00	65.1	65.1	61.8	34.2
Industry/industrial processes	841.14	1 420.00	1 420.00	1 442.00	1 442.00	68.8	68.8	71.4	71.4
Agriculture	471.23	492.00	492.00	515.00	512.00	4.4	4.4	9.3	8.7
LULUCF	-251.19	-526.00	-526.00	-635.00	-635.00	109.4	109.4	152.8	152.8
Waste	386.73	493.13	450.00	362.00	303.00	27.5	16.4	-6.4	-21.7
Other	-	-	-	-	-	-	-	-	-
Total GHG emissions excluding LULUCF	5 668.92	9 192.40	9 145.94	7 867.33	7 187.48	61.4	61.3	39.9	26.8

Sources: Cyprus's BR4 CTF table 6. Updated projections were provided by Cyprus during the review and in its resubmission.

62. According to the projections reported for 2020 under the WEM scenario, emissions were projected to increase in all sectors between 1990 and 2020. The pattern of projected emissions reported for 2030 under the same scenario is different. The most significant projected emission increases are in the industry/industrial processes sector (71.4 per cent), followed by the transport sector (61.8 per cent) and the energy sector (29.8 per cent), while the only decrease is projected in the waste sector (6.4 per cent).

63. If additional measures are considered (i.e. under the WAM scenario), the patterns of projected emissions by 2030 presented by sector are similar, because emissions are projected to increase in the industry/industrial processes, transport and energy sectors (by 71.4, 34.2

and 19.6 per cent, respectively), while emissions for 2030 are projected to decrease only in the waste sector (by 21.7 per cent).

64. Cyprus presented the WEM and WAM scenarios by gas for 2020 and 2030, as summarized in table 8.

Table 8

Summary of greenhouse gas emission projections for Cyprus presented by gas

Gas	GHG emissions and removals (kt CO ₂ eq)					Change (%)			
	1990	2020		2030		1990–2020		1990–2030	
		WEM	WAM	WEM	WAM	WEM	WAM	WEM	WAM
CO ₂ ^a	4 664.61	7 804.89	7 796.95	6 601.91	5 976.56	67.3	67.2	41.5	28.1
CH ₄	654.63	796.87	756.91	672.59	623.21	21.7	15.6	2.7	–4.8
N ₂ O	285.77	339.42	340.86	341.29	336.55	18.8	19.3	19.4	17.8
HFCs	63.88	251.05	251.05	251.36	250.99	293.0	293.0	293.5	292.9
PFCs	0.00	–	0.00	–	0.00	–	–	–	–
SF ₆	0.03	0.17	0.17	0.18	0.17	466.7	466.7	500.0	466.7
NF ₃	0.00	–	0.00	–	0.00	–	–	–	–
Total GHG emissions without LULUCF	5 668.92	9 192.40	9 145.94	7 867.33	7 187.48	61.4	61.3	39.9	26.8

Sources: Cyprus's BR4 CTF table 6. Updated projections were provided by Cyprus during the review and in its resubmission.

^a Cyprus did not include indirect CO₂ emissions in its projections.

65. For 2020 under the WEM scenario, significant increases are projected for CO₂, CH₄ and N₂O emissions: 67.3, 21.7 and 18.8 per cent between 1990 and 2020, respectively. Under the same scenario for 2030, projected emissions show an increasing trend for CO₂ and CH₄ (41.5 and 2.7 per cent, respectively), while projected emissions of N₂O are almost the same as those for 2020.

66. If additional measures are considered (i.e. under the WAM scenario), the patterns of emissions by 2020 presented by gas are similar, showing an increase in CO₂, CH₄ and N₂O emissions (67.2, 15.6 and 19.3 per cent, respectively) compared with the 1990 level. The same increasing pattern is projected for 2030 under the WAM scenario, except for CH₄, where a reduction (by 4.8 per cent) is projected.

(d) Assessment of adherence to the reporting guidelines

67. The ERT assessed the information reported in the BR4 of Cyprus 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 Cyprus

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation or encouragement
1	Reporting requirement ^a specified in paragraph 30 Issue type: completeness Assessment: encouragement	The Party did not report a sensitivity analysis in its BR4. During the review Cyprus explained that sensitivity analyses for the projections provided in its BR4 were not available. The ERT encourages Cyprus to report a sensitivity analysis in its next BR.
2	Reporting requirement ^a specified in paragraph 34	The Party did not report emission projections for the LULUCF sector in its BR4.

No.	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
	<p>Issue type: completeness</p> <p>Assessment: recommendation</p>	<p>During the review Cyprus explained that these projections will be included in its next submission.</p> <p>The ERT recommends that Cyprus include, to the extent possible, emission projections for the LULUCF sector in its next submission.</p>
3	<p>Reporting requirement^a specified in paragraph 36</p> <p>Issue type: completeness</p> <p>Assessment: recommendation</p>	<p>The Party did not report information about emission projections related to fuel sold to ships and aircraft engaged in international transport in its BR4.</p> <p>During the review Cyprus explained that emission projections related to international bunker fuels have not been prepared.</p> <p>The ERT reiterates the recommendation from the previous review report for Cyprus to separately report in the next BR emission projections related to fuel sold to ships and aircraft engaged in international transport, to the extent possible, rather than including them in the totals.</p>
4	<p>Reporting requirement^a specified in paragraph 43</p> <p>Issue type: transparency</p> <p>Assessment: encouragement</p>	<p>The Party did not fully report in its BR4 information about the models and approaches used. Information about the model or approach used was only provided for the energy sector. The BR4 did not contain information about or describe the models or approaches used for other sectors, summarize their strengths and weaknesses or explain how they account for possible overlaps or synergies between different PaMs.</p> <p>During the review Cyprus explained that the methodology applied for all scenarios is the same as that used for the preparation of its 2019 national GHG inventory submission. Projected AD were only available for the energy and agriculture sectors. The energy projections are the result of modelling, whereas the agriculture sector projections depend on expert judgment provided by the Department of Agriculture. In addition, where AD were not available, the Party used GDP or the same data it reported for the previous inventory year.</p> <p>The ERT reiterates the encouragement from previous review reports for the Party to describe the models and approaches used for projections for all sectors and gases, including the inputs and outputs, their strengths and weaknesses and all the information required by paragraph 43 of the UNFCCC reporting guidelines on NCs in its next BR to enhance the transparency of its reporting.</p>
5	<p>Reporting requirement^a specified in paragraph 46</p> <p>Issue type: completeness</p> <p>Assessment: encouragement</p>	<p>The Party did not discuss qualitatively, and, where possible, quantitatively, the sensitivity of the projections to underlying assumptions.</p> <p>During the review Cyprus explained that this information is not available owing to the lack of projection data disaggregated by measure.</p> <p>The ERT encourages Cyprus to discuss in its next BR qualitatively, and, where possible, quantitatively, the sensitivity of the projections to underlying assumptions.</p>
6	<p>Reporting requirement^a specified in paragraph 47</p> <p>Issue type: transparency</p> <p>Assessment: encouragement</p>	<p>Cyprus only included in its BR4 projected data on key underlying assumptions and values of variables such as GDP growth, population growth, tax levels and international fuel prices and did not provide any historical data.</p> <p>During the review Cyprus provided information on the parameters and variables used for the projections, but did not provide any historical data in CTF table 5.</p> <p>The ERT encourages Cyprus to also include in its next BR historical data on key underlying assumptions and values of variables such as GDP growth, population growth, tax levels and international fuel prices.</p>
7	<p>Reporting requirement^b specified in paragraph 12</p> <p>Issue type: transparency</p>	<p>In the BR4 the Party provided information on the changes since its most recent NC in terms of the models or methodologies used for the preparation of projections, but did not provide all the supporting documentation on these changes since its most recent NC, such as a projection comparison between the</p>

No.	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
	Assessment: encouragement	<p data-bbox="580 255 1305 309">NC7 or BR3 and BR4 and a reflection on the recommendations and encouragements from previous reviews.</p> <p data-bbox="580 322 1417 495">During the review Cyprus explained that detailed information on energy modelling is available in its NECP and the annexes thereto. The agriculture sector projections depend on expert judgment provided by the Department of Agriculture. For the other sectors for which projected data were not available, the data were projected using GDP or considered the same as the previous inventory year.</p> <p data-bbox="580 508 1398 622">The ERT encourages Cyprus to provide in its next BR additional supporting documentation on the changes in the models or methodologies used for the preparation of projections since its most recent NC, such as a detailed description of any differences in projections.</p>

Note: 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.

^a 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.

^b Item listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on BRs.

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

68. Cyprus 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, Cyprus provided information in its BR4 on its provision of support to developing country Parties. The ERT commends Cyprus for reporting this information and suggests that it continue to do so in future BRs.

69. Cyprus contributed EUR 350,000 to the GCF in 2018. In addition, the Party started a climate change initiative to develop a regional action plan to address the specific needs and challenges faced by countries in the Eastern Mediterranean and the Middle East that are particularly vulnerable to the impacts of climate change, including Bahrain, Cyprus, Egypt, Greece, Iran (Islamic Republic of), Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, State of Palestine, the Syrian Arab Republic, Turkey and the United Arab Emirates. The goal of the initiative is to jointly address and lessen the impact of climate change and advance mitigation actions in accordance with the Paris Agreement. A detailed work programme has been prepared and the regional action plan is expected to be adopted in mid-2021. The programme is structured in three phases: firstly, a scoping phase, running until September 2020 and focused on assessing the current situation, identifying gaps in research and policy needs and providing a toolkit of possible actions to address climate challenges in the region; secondly, the development of a regional climate action plan, to be adopted in mid-2021; and thirdly, the implementation of the action plan, for which a timeline has not yet been defined.

III. Conclusions and recommendations

70. The ERT conducted a technical review of the information reported in the BR4 and CTF tables of Cyprus 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; the progress of Cyprus towards achieving its target; and the Party's provision of support to developing country Parties.

71. Cyprus's total GHG emissions excluding LULUCF covered by its quantified economy-wide emission reduction target were estimated to be 54.8 per cent above its 1990 level, whereas total GHG emissions including LULUCF were 53.8 per cent above its 1990 level, in 2018. Emissions reached the highest point in 2008 and decreased thereafter until

2013. Since 2013, emissions have shown an increasing trend. The changes in total emissions were driven mainly by factors such as the increase in the resident population and substantial economic growth (interrupted only between 2008 and 2012 by the global financial crisis), particularly in the tourism sector. These factors have contributed to a considerable increase in energy consumption for electricity and transport, sectors which are predominantly fossil fuel based, and to an increase in the use of F-gases for refrigeration and air conditioning.

72. Under the Convention, Cyprus 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 CO₂, CH₄, N₂O, HFCs, PFCs and SF₆, expressed using GWP values from the AR4. Emissions and removals from the LULUCF sector are not included.

73. Under the ESD, Cyprus has a target of reducing its emissions by 5 per cent below the 2005 level by 2020. The 2013–2020 progression in Cyprus’s AEAs (its national emission target under the ESD) is 5,919.07–3,975.25 kt CO₂ eq.

74. In addition to its 2020 target, Cyprus also reported on its longer-term GHG emission reduction target of a 24 per cent reduction below the 2005 level by 2030 for sectors not covered by the EU ETS.

75. In 2017, Cyprus’s ESD emissions were 1.8 per cent (74.26 kt CO₂ eq) above the AEA under the ESD. Cyprus has a cumulative surplus of 7,587.88 kt CO₂ eq with respect to its AEAs. Cyprus has not used market-based mechanisms so far. The ERT noted that, to achieve its target under the ESD, Cyprus plans to use its cumulative surplus under the flexibility allowed under the ESD, which will be sufficient to cover the cumulative AEA deficit.

76. The GHG emission projections provided by Cyprus in its BR4 correspond to the WEM and WAM scenarios. Under these scenarios, emissions are projected to be 61.4 and 61.3 per cent above the 1990 level by 2020, respectively. According to the projections under the WEM scenario, ESD emissions are estimated to reach 4,097 kt CO₂ eq by 2020. Under the WAM scenario, Cyprus’s emissions from ESD sectors in 2020 are projected to be 4,052 kt CO₂ eq. The projected level of emissions under the WEM and WAM scenarios is 3.1 and 1.9 per cent, respectively, above the AEAs for 2020. The ERT noted that the Party’s cumulative surplus of AEAs is 7,587.88 kt CO₂ eq, which suggests that Cyprus may need to use the flexibility provided under the ESD to meet its target under the WEM scenario.

77. Cyprus’s main policy framework relating to energy and climate change is the EU 2020 climate and energy package and the EU 2030 climate and energy framework. Key legislation supporting Cyprus’s climate change goals includes the ESD, the ESR and the EU regulation on the governance of the Energy Union and climate action (regulation 2018/1999/EU).

78. The 2021–2030 EU-wide policies are operationalized through Cyprus’s NECP. The key policy priorities include reducing emissions for sectors under the ESR and EU ETS by 20.9 and 24.9 per cent, respectively, compared with the 2005 level. Emissions from the LULUCF sector are to be offset by at least an equivalent removal of CO₂ from the atmosphere. The Party has a policy aiming for the share of renewable energy in gross final energy consumption to reach 23 per cent by 2030 and for final energy consumption to be reduced by 13 per cent by 2030.

79. Cyprus 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, Cyprus provided information on its provision of support to developing country Parties. This support includes making a contribution to the GCF in 2018 and planning an initiative to coordinate climate change action in countries in the Eastern Mediterranean and the Middle East that are particularly vulnerable to the impacts of climate change, which is expected to be implemented from mid-2021 following the adoption of a regional action plan.

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

- (a) To improve the completeness of its reporting by:
 - (i) Providing the estimated mitigation impacts of its PaMs or by clearly explaining why this may not be possible due to its national circumstances (see issue 5 in table 4);

- (ii) Separately reporting emission projections related to fuel sold to ships and aircraft engaged in international transport, to the extent possible, rather than including them in the totals (see issue 3 in table 9);
- (iii) Including, to the extent possible, emission projections for the LULUCF sector (see issue 2 in table 9);
- (b) To improve the transparency of its reporting by:
 - (i) Clearly identifying which PaMs it has implemented or plans to implement to achieve its economy-wide emission reduction target and indicate any changes since its last NC or BR, and by reporting, to the extent possible, mitigation actions by sector (energy, IPPU, agriculture, LULUCF, waste and other) and by gas (CO₂, CH₄, N₂O, HFCs, PFCs and SF₆) in a consistent manner between the BR and CTF table 3 (see issue 1 in table 4);
 - (ii) Clearly reporting the names of the implementing entities for all mitigation actions listed in CTF table 3 and providing the correct status of implementation for each of the mitigation actions listed (see issue 4 in table 4);
 - (iii) Clearly identifying any changes in its domestic institutional arrangements, including institutional, legal, administrative and procedural arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of the progress towards its economy-wide emission reduction target (see issue 2 in table 4);
- (c) 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 Cyprus. Available at <https://unfccc.int/process-and-meetings/transparency-and-reporting/reporting-and-review-under-the-convention/greenhouse-gas-inventories-annex-i-parties/national-inventory-submissions-2019>.

2020 GHG inventory submission of Cyprus. Available at <https://unfccc.int/ghg-inventories-annex-i-parties/2020>.

BR3 of Cyprus. Available at <https://unfccc.int/process-and-meetings/transparency-and-reporting/reporting-and-review-under-the-convention/national-communications-and-biennial-reports-annex-i-parties/biennial-report-submissions/third-biennial-reports-annex-i>.

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

BR4 CTF tables of Cyprus. 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.

“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 Cyprus. Available at [https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1576057733043&uri=CELEX:32019H0903\(13\)](https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1576057733043&uri=CELEX:32019H0903(13)).

Report on the individual review of the annual submission of Cyprus submitted in 2019. FCCC/ARR/2019/CYP. Available at <https://unfccc.int/documents/204342>.

Report on the technical review of the BR3 of Cyprus. FCCC/TRR.3/CYP. Available at <https://unfccc.int/documents/182905>.

“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 Theodoros Mesimeris (Department of Environment in the Ministry of Agriculture, Rural Development and

Environment of Cyprus), including additional material. The following documents¹ were provided by Cyprus:

Department of Environment, Ministry of Agriculture, Rural Development and Environment. 2020. *Mix of energy efficiency policy measures planned/expected to be implemented over the period from 1 January 2021 to 31 December 2030.*

European Environment Agency. 2019. *EEA estimates for 2005–2012; 2013, 2014, 2015, 2016, 2017 from 2016 comprehensive and 2017 annual review under ESD; 2018 proxy estimates by EEA.*

¹ Reproduced as received from the Party.