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## **Report on the technical review of the eighth national communication and the technical review of the fifth biennial report of Greece**

Parties included in Annex I to the Convention were requested by decision 6/CP.25 to submit their eighth national communication to the secretariat by no later than 31 December 2022. According to decision 15/CMP.1, Parties included in Annex I to the Convention that are also Parties to the Kyoto Protocol are required to include in their national communications supplementary information under Article 7, paragraph 2, of the Kyoto Protocol. This report presents the results of the technical review of the eighth national communication and relevant supplementary information under the Kyoto Protocol of Greece, conducted by an expert review team in accordance with the “Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention” and the “Guidelines for review under Article 8 of the Kyoto Protocol”.

Developed country Parties were requested by decision 6/CP.25 to submit their fifth biennial report to the secretariat by no later than 31 December 2022. This report presents the results of the technical review of the fifth biennial report of Greece, 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 of these submissions took place in Athens from 15 to 19 May 2023.



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## Abbreviations and acronyms

AEA	annual emission allocation
Annex I Party	Party included in Annex I to the Convention
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
ESR	European Union effort-sharing regulation
EU	European Union
EU ETS	European Union Emissions Trading System
GDP	gross domestic product
GHG	greenhouse gas
GWP	global warming potential
Hellenic Aid	Directorate General of International Development Cooperation of Greece
HFC	hydrofluorocarbon
ICAO	International Civil Aviation Organization
IMO	International Maritime Organization
IPPU	industrial processes and product use
LULUCF	land use, land-use change and forestry
MEEN	Ministry of the Environment and Energy of Greece
N <sub>2</sub> O	nitrous oxide
NA	not applicable
NC	national communication
NE	not estimated
NF <sub>3</sub>	nitrogen trifluoride
NO	not occurring
non-Annex I Party	Party not included in Annex I to the Convention
ODA	official development assistance
PaMs	policies and measures
PFC	perfluorocarbon
reporting guidelines for supplementary information	“Guidelines for the preparation of the information required under Article 7 of the Kyoto Protocol. Part II: Reporting of supplementary information under Article 7, paragraph 2”
RES	renewable energy source(s)
SDG	Sustainable Development Goal
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 in-country technical review of the NC8 and BR5 of Greece. 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” and “Part V: UNFCCC guidelines for the technical review of national communications from Parties included in Annex I to the Convention” (annex to decision 13/CP.20), and the “Guidelines for review under Article 8 of the Kyoto Protocol” (annex to decision 22/CMP.1 and annex I to decision 4/CMP.1).

2. In accordance with decision 13/CP.20, a draft version of this report was transmitted to the Government of Greece, which provided comments that were considered and incorporated, as appropriate, into this final version of the report.

3. The review was conducted from 15 to 19 May 2023 in Athens by the following team of nominated experts from the UNFCCC roster of experts: Vincent Agu (Nigeria), Marko Aunedi (Croatia), Diana Guzman Barraza (Mexico), Maria Jose Lopez (Belgium), Elisabeth Pagnac-Farbiaz (France) and Roberto Acosta Moreno (Cuba). Vincent Agu and Maria Jose Lopez were the lead reviewers. The review was coordinated by Pedro Torres and Gopal Joshi (secretariat).

### **B. Summary**

4. The ERT conducted a technical review of the information reported in the NC8 of Greece in accordance with the UNFCCC reporting guidelines on NCs,<sup>1</sup> the reporting guidelines for supplementary information, in particular the supplementary information required under Article 7, paragraph 2, and on the minimization of adverse impacts under Article 3, paragraph 14, of the Kyoto Protocol<sup>2</sup> and of the information reported in the BR5 of Greece in accordance with the UNFCCC reporting guidelines on BRs.<sup>3</sup>

#### **1. Timeliness**

5. The NC8 was submitted on 14 December 2022, before the deadline of 31 December 2022 mandated by decision 6/CP.25.

6. The BR5 was submitted on 14 December 2022, before the deadline of 31 December 2022 mandated by decision 6/CP.25. The CTF tables were also submitted on 14 December 2022.

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

7. Issues and gaps identified by the ERT related to the information reported by Greece in its NC8 are presented in tables 1–2. The information reported, including the supplementary information under the Kyoto Protocol, mostly adheres to the UNFCCC reporting guidelines on NCs. The ERT concludes that the issues of a mandatory nature related to supplementary information under the Kyoto Protocol do not influence the Party’s ability to fulfil its commitments for the second commitment period of the Kyoto Protocol.

8. Greece made improvements to the reporting in its NC8 compared with that in its NC7 by addressing recommendations and encouragements from the previous review report. The ERT noted that the Party has improved:

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<sup>1</sup> Decision 6/CP.25, annex.

<sup>2</sup> Decision 15/CMP.1, annex, and decision 3/CMP.11, annex III.

<sup>3</sup> Decision 2/CP.17, annex.

(a) The transparency of the information reported on national circumstances relevant to GHG emissions and removals by providing more detailed information on socioeconomic indicators and on energy, transport and industry that best describes its national circumstances and historical trends;

(b) The completeness of the GHG inventory information reported by providing a summary and diagrams for sector-level GHG emissions and by describing the drivers for the decrease in CH<sub>4</sub> fugitive emissions from coal mining and handling and the decrease in emissions from venting and flaring;

(c) The completeness of the information reported on PaMs by providing information on PaMs planned at the national, state, provincial, regional and local level and on actions taken to implement commitments under Article 4, paragraph 2(e)(ii), of the Convention by organizing its reporting on PaMs by sector and by gas affected, including for the LULUCF sector, and by indicating where PaMs are no longer in place;

(d) The completeness of the information reported on projections and the total effects of PaMs by including a WAM scenario and the total effect of planned PaMs;

(e) The transparency and completeness of the information reported on financial, technological and capacity-building support by providing more detailed information on climate-specific financial contributions made as a result of applying the Rio markers methodology, how these contributions respond to the existing and emerging needs of non-Annex I Parties and how its assistance targets Parties that are particularly vulnerable to the adverse impacts of climate change;

(f) The transparency of the information reported on vulnerability assessment, climate change impacts and adaptation measures by providing more detailed information on its cooperation, in particular with North African countries, in the development of integrated plans for water resources, agriculture and the protection and rehabilitation of areas affected by drought, desertification and floods;

(g) The completeness of the information reported on research and systematic observation by providing specific information on capacity-building related to research and systematic observation for developing countries, on the opportunities for the free and open international exchange of data and information, and on the exchange and archiving of data regarding support for developing countries to establish and maintain observing systems and related data-exchange and monitoring systems;

(h) The transparency of the information reported on education, training and public awareness by providing more detailed information on the extent of public participation in the preparation and domestic review of the NCs;

(i) The completeness of the supplementary information related to the Kyoto Protocol reported by providing detailed information on the steps taken at the EU level to implement decisions of ICAO and IMO to reduce or limit GHG emissions.

Table 1  
**Assessment of completeness and transparency of mandatory information reported by Greece in its eighth national communication**

<i>Section of NC</i>	<i>Completeness</i>	<i>Transparency</i>	<i>Reference to description of recommendations</i>
Executive summary	Complete	Transparent	–
National circumstances relevant to GHG emissions and removals	Complete	Transparent	–
GHG inventory	Complete	Transparent	–
PaMs	Mostly complete	Transparent	Issue 1 in table I.1
Projections and the total effect of PaMs	Complete	Mostly transparent	Issues 2 and 6 in table I.2

<i>Section of NC</i>	<i>Completeness</i>	<i>Transparency</i>	<i>Reference to description of recommendations</i>
Vulnerability assessment, climate change impacts and adaptation measures	Complete	Transparent	–
Financial resources and transfer of technology	Mostly complete	Mostly transparent	Issues 1 and 4 in table I.3
Research and systematic observation	Complete	Transparent	–
Education, training and public awareness	Complete	Transparent	–

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

Table 2

**Assessment of completeness and transparency of mandatory supplementary information under the Kyoto Protocol reported by Greece in its eighth national communication**

<i>Supplementary information under the Kyoto Protocol</i>	<i>Completeness</i>	<i>Transparency</i>	<i>Reference to description of finding(s)</i>
National system	Complete	Transparent	–
National registry	Complete	Transparent	–
Supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17	Complete	Transparent	–
PaMs in accordance with Article 2	Complete	Mostly transparent	Issue 1 in table I.4
Domestic and regional programmes and/or arrangements and procedures	Complete	Transparent	–
Information under Article 10 <sup>a</sup>	Complete	Transparent	–
Financial resources	Complete	Transparent	–
Minimization of adverse impacts in accordance with Article 3, paragraph 14	Complete	Transparent	–

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

<sup>a</sup> The assessment refers to information provided by the Party on the provisions contained in Article 4, paras. 3, 5 and 7, of the Convention, as reported under Article 10 of the Kyoto Protocol, which is relevant to Annex II Parties only. An assessment of the information on the other provisions of Article 10 of the Kyoto Protocol is provided under the relevant substantive headings under the Convention, for example research and systematic observation.

9. Issues and gaps identified by the ERT related to the information reported by Greece in its BR5 are presented in table 3. The information reported mostly adheres to the UNFCCC reporting guidelines on BRs.

10. Greece made improvements to the reporting in its BR5 compared with that in its BR4, including by addressing recommendations and encouragements from the previous review report. The ERT noted that the Party has improved the transparency and completeness of the information reported on financial, technological and capacity-building support by providing more detailed information on climate-specific financial contributions made as a result of applying the Rio markers methodology, how these contributions respond to the existing and emerging needs of non-Annex I Parties and how its assistance targets Parties that are particularly vulnerable to the adverse impacts of climate change.

Table 3

**Summary of completeness and transparency of mandatory information reported by Greece in its fifth biennial report**

<i>Section of BR</i>	<i>Completeness</i>	<i>Transparency</i>	<i>Reference to description of finding(s)</i>
GHG emissions and removals	Complete	Transparent	–
Quantified economy-wide emission reduction target and related assumptions, conditions and methodologies	Complete	Mostly transparent	Issue 2 in table II.1
Progress in achievement of targets	Complete	Transparent	–
Provision of support to developing country Parties	Mostly complete	Mostly transparent	Issues 1 and 3 in table II.2

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

## **II. Technical review of the information reported in the eighth national communication and fifth biennial report**

### **A. National circumstances relevant to greenhouse gas emissions and removals**

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

11. The NC8 contains key data on legislation, population trends, geography and land use, climate and climate change, economic developments, energy, transport, the buildings sector, industry, trade, the services sector, agriculture, forestry, resource efficiency and wastewater. The NC8 provides a brief description of government structure. It describes comprehensively the national circumstances influencing national emission and removal trends. Transport and the energy industries are the main drivers of emission trends.

12. Since 2000 a decoupling of GHG emissions from economic development has been observed, as the annual growth rate of GHG emissions for 2000–2007 (approximately 1.0 per cent) was lower than the GDP annual growth rate (approximately 4.6 per cent). From 2014 to 2016, GDP was stable and increased by 1.1, 1.6 and 1.8 per cent in 2017, 2018 and 2019 respectively. In 2020, owing to the coronavirus disease 2019 pandemic, GDP fell by 9.9 per cent.

13. The decrease in GHG emissions in 2008–2016 is due to the economic recession in the country. For 2017–2019, although GDP slightly increased, GHG emissions continued to decrease. This overall decrease is due to the impact of mitigation measures adopted in the energy sector (i.e. the use of RES, energy efficiency measures and improvements in the road infrastructure and in public transport). The large reduction in GHG emissions in 2020 is due to the pandemic.

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

14. The ERT assessed the information reported in the NC8 of Greece and recognized that the reporting is complete and transparent, and thus adheres to the UNFCCC reporting guidelines on NCs. There were no issues raised during the review relating to the topics discussed in this chapter of the review report.

## B. Greenhouse gas inventory information<sup>4</sup>

### 1. Technical assessment of the reported information

15. Greece reported information in its BR5 and NC8 on its historical GHG emissions and inventory arrangements. Total GHG emissions<sup>5</sup> excluding emissions and removals from LULUCF decreased by 27.4 per cent between 1990 and 2020, while total GHG emissions including net emissions or removals from LULUCF decreased by 31.1 per cent over the same period. Emissions peaked in 2005 and decreased thereafter.

16. The decrease in total GHG emissions was driven by the decrease in emissions from the energy sector, which accounted for 69.2 per cent of total emissions in 2021. The decrease from 2008 onward in this sector was mainly due to the economic recession in the country, but also to the effect of mitigation actions, such as the introduction of RES and energy efficiency measures. CH<sub>4</sub> fugitive emissions from coal mining and handling, a key category, also show a decreasing trend. This decrease is due to the gradual phasing out of lignite-fired power plants in recent years.

17. Table 4 illustrates the emission trends by sector and by gas for Greece. The emissions reported in the 2023 annual submission differ from the data reported in CTF table 1 as the 2023 annual submission became available after the submission of the CTF tables.

Table 4

#### Greenhouse gas emissions by sector and by gas for Greece for 1990–2021

	GHG emissions (kt CO <sub>2</sub> eq)						Change (%)		Share (%)	
	1990	2000	2010	2019	2020	2021	1990–2020	2020–2021	1990	2021
<i>Sector</i>										
1. Energy	77 133.43	96 890.77	93 261.20	61 325.47	51 663.76	53 598.90	–33.0	3.7	74.2	69.2
A1. Energy industries	43 238.41	54 914.92	52 195.83	31 970.67	24 482.18	25 473.02	–43.4	4.0	41.6	32.9
A2. Manufacturing industries and construction	9 400.30	9 926.26	6 891.90	4 615.86	4 450.69	4 825.44	–52.7	8.4	9.0	6.2
A3. Transport	14 502.64	18 810.54	22 447.65	17 837.12	15 340.92	16 751.72	5.8	9.2	13.9	21.6
A4. and A5. Other	8 642.81	11 603.05	10 230.89	6 085.77	6 895.90	6 083.67	–20.2	–11.8	8.3	7.9
B. Fugitive emissions from fuels	1 349.26	1 636.00	1 494.93	816.05	494.07	465.05	–63.4	–5.9	1.3	0.6
C. CO <sub>2</sub> transport and storage	NO	NO	NO	NO	NO	NO	–	–	–	–
2. IPPU	10 933.61	14 281.96	11 433.79	11 346.95	10 158.91	9 991.75	–7.1	–1.6	10.5	12.9
3. Agriculture	10 534.68	9 563.76	9 198.69	8 100.53	8 153.85	8 045.99	–22.6	–1.3	10.1	10.4
4. LULUCF	–2 247.59	–2 519.82	–3 392.25	–5 400.44	–5 415.90	–5 476.23	–141.0	–1.1	NA	NA
5. Waste	5 383.97	5 922.97	5 266.27	5 380.33	5 487.96	5 852.19	1.9	6.6	5.2	7.6
6. Other <sup>d</sup>	NO	NO	NO	NO	NO	NO	–	–	–	–
<i>Gas<sup>b</sup></i>										
CO <sub>2</sub>	83 438.04	102 973.17	97 354.15	65 759.48	55 619.77	57 556.33	–33.3	3.5	80.2	74.3
CH <sub>4</sub>	12 526.76	13 244.46	12 431.60	11 210.53	10 959.05	11 323.42	–12.5	3.3	12.0	14.6
N <sub>2</sub> O	6 855.77	5 867.17	5 035.28	3 917.48	3 930.76	3 817.43	–42.7	–2.9	6.6	4.9
HFCs	991.01	4 460.65	4 215.53	5 137.08	4 816.27	4 675.45	386.0	–2.9	1.0	6.0

<sup>4</sup> GHG emission data in this section are based on Greece’s 2023 annual submission, version 1. All emission data in subsequent chapters are based on Greece’s BR5 CTF tables unless otherwise noted.

<sup>5</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.



	GHG emissions (kt CO <sub>2</sub> eq)						Change (%)		Share (%)	
	1990	2000	2010	2019	2020	2021	1990– 2020	2020– 2021	1990	2021
	PFCs	171.09	110.09	117.35	123.63	133.54	111.18	–22.0	–16.7	0.2
SF <sub>6</sub>	3.02	3.92	6.04	5.07	5.09	5.03	68.6	–1.2	0.0	0.0
NF <sub>3</sub>	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	–	–	–	–
<b>Total GHG emissions excluding LULUCF</b>	<b>103 985.69</b>	<b>126 659.45</b>	<b>119 159.95</b>	<b>86 153.27</b>	<b>75 464.49</b>	<b>77 488.83</b>	<b>–27.4</b>	<b>2.7</b>	<b>100.0</b>	<b>100.0</b>
<b>Total GHG emissions including LULUCF</b>	<b>101 738.10</b>	<b>124 139.63</b>	<b>115 767.71</b>	<b>80 752.83</b>	<b>70 048.59</b>	<b>72 012.60</b>	<b>–31.1</b>	<b>2.8</b>	<b>–</b>	<b>–</b>

Source: GHG emission data: Greece's 2023 annual submission, version 1.

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

<sup>b</sup> Emissions by gas without LULUCF.

18. In brief, Greece's national inventory arrangements were established in accordance with joint ministerial decision 22993/2017 (OG B 1710), entitled "Structure and operation of the national greenhouse gas inventory system". There have been no changes in these arrangements since the BR4. MEEN has overall responsibility for the national GHG inventory. The Division of Climate Change and Air Quality of MEEN plays an active role in the inventory planning, preparation and management. The preparation of the annual inventory is assigned on a contractual basis to the National Technical University of Athens School of Chemical Engineering. Governmental ministries and agencies ensure the provision of data through their appointed focal persons.

## 2. Assessment of adherence to the reporting guidelines

19. The ERT assessed the information reported in the NC8 and BR5 of Greece and recognized that the reporting is complete and transparent, and thus adheres to the UNFCCC reporting guidelines on NCs and 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. National system for the estimation of anthropogenic emissions by sources and removals by sinks

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

20. Greece provided in the NC8 a description of how its national system for the estimation of anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol is performing the general and specific functions defined in the annex to decision 19/CMP.1 in conjunction with decisions 3/CMP.11 and 4/CMP.11. The description includes all the elements mandated by paragraph 30 of the annex to decision 15/CMP.1. The ERT took note of the review of the national system reflected in the report on the individual review of the 2022 annual submission of Greece.

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

21. The ERT assessed the information reported in the NC8 of Greece and recognized that the reporting is complete and transparent, and thus adheres to the reporting guidelines for supplementary information. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

## 4. National registry

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

22. In its NC8 Greece provided information on how its national registry performs the functions in accordance with the annex to decision 13/CMP.1 in conjunction with decision

3/CMP.11 and the annex to decision 5/CMP.1 and complies with the requirements of the technical standards for data exchange between registry systems. The ERT took note of the review of the national registry reflected in the report on the individual review of the 2022 annual submission of Greece.

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

23. The ERT assessed the information reported in the NC8 of Greece and recognized that the reporting is complete and transparent, and thus adheres to the reporting guidelines for supplementary information. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

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

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

24. Greece reported information on its economy-wide emission reduction target in its BR5. For Greece the Convention entered into force on 2 November 1994. Under the Convention Greece 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.

25. 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.

26. The EU-wide targets are primarily implemented through the EU ETS and ESD. The EU ETS covers mainly point emissions sources in the energy, industry and aviation sectors. An EU-wide emission cap was put in place for 2013–2020 for the EU ETS with the goal of reducing emissions by 21 per cent below the 2005 level by 2020. For 2030, a reduction target of 62 per cent below the 2005 level has been set for emissions covered by the EU ETS. The ESD became operational in 2013 and covers sectors outside the EU ETS, including transport (excluding aviation and international maritime transport), residential and commercial buildings, agriculture, small industry and waste. The ESD is regulated through targets for each member State that add up to a reduction at the EU level of 10 per cent below the 2005 level by 2020. The ESR, the successor to the ESD, was adopted in 2018 and amended in 2023 with the target of reducing emissions covered under the ESR by 40 per cent below the 2005 level by 2030.<sup>6</sup>

27. 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.

28. 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 2050 climate-neutrality target was made binding in the first European Climate Law, adopted in 2021. It also increased the ambition of the 2030 emission reduction target to at least 55 per cent below the 1990 level. Member States will set out any increased ambition in the update of their national energy and climate plans.

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<sup>6</sup> Regulation (EU) 2023/857 of the European Parliament and of the Council of 19 April 2023 amending regulation (EU) 2018/842 on binding annual GHG emission reductions by member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement, and regulation (EU) 2018/1999, available at <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32023R0857>.

29. Greece has a national target of reducing its emissions to 4 per cent below the 2005 level by 2020 for ESD sectors. This target has been translated into binding quantified AEAs for 2013–2020. Greece’s AEAs change following a linear path from 58,955.03 kt CO<sub>2</sub> eq in 2013 to 60,049.19 kt CO<sub>2</sub> eq in 2020.<sup>7</sup> Under the ESR, Greece has a national target of reducing emissions from covered sectors to 22.7 per cent below the 2005 level by 2030.

30. The new National Climate Law on the transition to climate neutrality and adaptation to climate change was passed by the Hellenic Parliament in May 2022. The National Climate Law is a step towards setting up the necessary robust national policy framework to enable the transition to zero GHG emissions by 2050. The legislation sets interim targets to cut GHG emissions by at least 55 per cent by 2030 and 80 per cent by 2040 compared with the 1990 level. The National Climate Law sets a final goal of net zero emissions by 2050. These national targets are more ambitious than those of the 2019 National Energy and Climate Plan and the amended ESR.

31. In order to align with the National Climate Law, the Government of Greece is preparing a revised national energy and climate plan, which will include more ambitious targets for 2030 compared with those of both the 2019 National Energy and Climate Plan and the ESR, with a view to reaching climate neutrality by 2050.

## 2. Assessment of adherence to the reporting guidelines

32. The ERT assessed the information reported in the BR5 of Greece and recognized that the reporting is complete and transparent, and thus adheres 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.

## D. Information on policies and measures

### 1. Technical assessment of the reported information

33. Greece provided in its NC8 and BR5 information on its PaMs<sup>8</sup> implemented and planned to fulfil its commitments under the Convention. Greece reported that the adopted PaMs are fully implemented. Greece’s set of PaMs is similar to that previously reported.

34. Greece 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. Greece also indicated that there have been no changes to its institutional, legal, administrative and procedural arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of progress towards its target.

35. MEEN is the main governmental body entrusted with the development and implementation of environmental policy in Greece. MEEN is responsible for the formulation of policies concerning environmental protection, energy, climate change and forestry, for the coordination of implementation efforts and for ensuring compliance with the current legislative framework. For this purpose, MEEN cooperates both with other competent ministries and with regional, prefectural and local authorities. Other ministries are responsible for integrating environmental policy and climate change targets within their respective fields.

36. Greece’s assessment of the economic and social consequences of its response measures follows the EU process policy, which includes an impact assessment in which all proposals are examined before any legislation is passed.

37. The assessment of the economic and social consequences of response measures is conducted in accordance with EU procedures for which all relevant impacts of climate change policy measures are taken into account. These procedures are included in various EU cooperation policies and agreements with third countries at a sectoral level (e.g. trade

<sup>7</sup> According to the EU transaction log.

<sup>8</sup> The UNFCCC reporting guidelines on BRs use the term “mitigation actions”, whereas the UNFCCC reporting guidelines on NCs use the term “policies and measures”. The terms are used interchangeably in this report to refer to the relevant information in either the NC or BR.

agreements) and at an overarching political level in regional cooperation with countries in Africa, Asia and Latin America, and in bilateral relations with non-EU countries.

38. In its reporting on PaMs, Greece provided the estimated emission reduction impacts for all of its most significant implemented PaMs, including the estimated emission and removal impacts of PaMs in the LULUCF sector.

39. The Party described its general methodology for estimating the impacts of its PaMs. The mitigation effect of each policy or measure is estimated by comparing the WEM scenario with a hypothetical baseline scenario that does not include the mitigation effect of that policy or measure. Any change in the mitigation impact of PaMs compared with the previous submission is attributed to a change in the WEM scenario. The detailed methodology is described in Sebos et al. (2021).

40. 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 CO<sub>2</sub> emissions from cars and vans, the carbon capture and storage directive, and the general programmes for environmental conservation, namely the 7<sup>th</sup> Environment Action Programme and the clean air policy package. The 2021 European Climate Law, which forms part of the European Green Deal, made climate neutrality by 2050 legally binding and raised the EU-wide 2030 emissions reduction target to at least 55 per cent compared with the 1990 level. In 2023, the European Parliament adopted a series of legislative proposals, collectively referred to as Fit for 55, intended to help achieve the new 2030 target. These new regulations strengthened both the ESR and EU ETS 2030 targets, extended the EU ETS to include maritime shipping in 2024 and established the Social Climate Fund to address equitability of mitigation impacts. The regulations also created the EU ETS 2 to cover at the point of distribution most fuel used in sectors not covered by the EU ETS, beginning in 2027.

41. The 2021–2030 EU-wide policies are operationalized through the national energy and climate plans of EU member States, which should set out national objectives for each of the five dimensions of the Energy Union, namely energy security; the internal energy market; energy efficiency; decarbonization; and research, innovation and competitiveness. The national energy and climate plans are periodically updated to reflect changes to EU policy, such as the implementation of the European Green Deal. Greece's 2019 National Energy and Climate Plan specifies targets for GHG emissions, RES and energy efficiency for 2030. For GHG emissions, the 2019 National Energy and Climate Plan aims at a reduction of more than 40 per cent by 2030 compared with the 1990 level and more than 55 per cent compared with the 2005 level. For RES, the 2030 target is a share of RES in gross final energy consumption of at least 35 per cent. Finally, for energy efficiency, the target is set as the final energy consumption in 2030 being lower than in 2017. The 2019 National Energy and Climate Plan is being updated in order to reflect the targets in the National Climate Law.

42. Greece introduced national-level policies to achieve its targets under the ESD and domestic emission reduction targets. The 2020 ESD target of Greece is to reduce emissions by 4 per cent compared with the 2005 level. The key policies reported are the promotion of RES for electricity generation and efficiency improvements in the conventional power generation system. The mitigation effect of the promotion of RES for electricity generation represents a mitigation impact of 11,000 kt CO<sub>2</sub> eq, while the efficiency improvements in the energy sector represent a mitigation reduction of 15,000 kt CO<sub>2</sub> eq in 2020.

43. Greece highlighted the continued impact of its implemented domestic mitigation actions, which will continue to contribute towards meeting the 2030 target. Additionally, Greece has reported its intention to expand its action plan to include, for example, the promotion of RES for energy generation, representing a mitigation potential of 30,792 kt CO<sub>2</sub> eq by 2030 (19,000 kt CO<sub>2</sub> eq and 11,792 kt CO<sub>2</sub> eq), as well as energy efficiency improvements in the building sector, representing a combined expected mitigation impact of 5,390 kt CO<sub>2</sub> eq by 2030 (2,400 kt CO<sub>2</sub> eq and 2,990 kt CO<sub>2</sub> eq).

44. Table 5 provides a summary of the reported information on the PaMs of Greece.

Table 5  
**Summary of information on policies and measures reported by Greece**

<i>Sector</i>	<i>Key PaMs</i>	<i>Estimated mitigation impact in 2020 (kt CO<sub>2</sub> eq)</i>	<i>Estimated mitigation impact in 2030 (kt CO<sub>2</sub> eq)</i>
Energy			
Energy efficiency	Efficiency improvements and switch to less-carbon-intensive fuels in the energy supply system	15 000.00	10 400.00
	Improvement of energy efficiency in buildings	2 200.00	2 400.00
	Further improvement of energy efficiency in buildings (planned promotion of natural gas and additional measures)	NE	2 990.00
Energy supply and renewable energy	Promotion of RES for electricity generation	11 000.00	19 000.00
	Further promotion of RES for electricity generation (planned measure)	NA	11 792.00
Transport	Biofuel use in transport		700.00
	Efficiency improvement of vehicles	600.00	650.00
Industry	Efficiency improvement in industrial end uses (planned measure)	NA	1 276.00
	Promotion of natural gas in industry	814.00	970.00
IPPU	Reduction of fluorinated gases	760.00	1 700.00
Agriculture	Managed improvement of cropland, livestock and animal waste, and development of sustainable agriculture	375.00	750.00
LULUCF	Forest management, protection, restoration and planting	NE	4 122.00
Waste	Reduced landfilling	600.00	1 100.00
	Collection, reuse and recycling	900.00	650.00

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

45. The monitoring mechanism of PaMs is detailed in the 2019 National Energy and Climate Plan and is mostly based on the requirements of EU regulations. Regarding energy, Greece stated in its 2019 National Energy and Climate Plan that it will initially focus on monitoring the evolution of final energy consumption and the implementation of PaMs designed to improve energy efficiency. The purpose of this process is to identify any deviations from the target. Regarding RES, Greece stated in its 2019 National Energy and Climate Plan that effective coordination and cooperation between the institutional bodies involved and the development of an efficient mechanism for monitoring all operating parameters are deemed to be necessary for the effective functioning and monitoring of the licensing framework. Greece also stressed in its 2019 National Energy and Climate Plan that the development of a single governance framework to monitor and assess PaMs is a key priority.

46. The National Climate Law legislates for ending the use of fossil fuels, such as lignite, in electricity production by 2028, although it has been proposed to move the target date to 2025 if the security of the energy supply allows. The National Climate Law also states that from 1 January 2024 at least a quarter of new private cars sold or leased must be purely electric or hybrid vehicles, and from 2026 all new taxis and one third of new rental vehicles must be zero emission vehicles. From 1 January 2030 all new passenger and light commercial vehicles must be zero emission vehicles. New provisions for buildings are introduced by the National Climate Law, such as a prohibition on the installation of heating oil boilers from 1 January 2025, and from 1 January 2030 heating oil must be mixed with at least 30 per cent by volume of renewable liquid fuels. From 2023, some corporations, including banks, telecommunication companies, power suppliers, water and waste utilities, logistics companies and retail businesses with more than 500 employees, will need to submit annual reports on their carbon footprint. The National Climate Law includes a provision for the

creation of a five-year budget starting in 2023 for projects in the power production, industry, transport, agriculture, buildings, forestry, and waste and land-use sectors. More than EUR 10 billion will be invested in expanding Greece's power grid by 2030, and the development of the renewable energy sector will be accelerated.

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

47. The ERT assessed the information reported in the NC8 and BR5 of Greece and identified an issue relating to completeness and thus adherence to the UNFCCC reporting guidelines on NCs. The finding is described in table I.1.

## **3. Domestic and regional programmes and legislative arrangements and procedures related to the Kyoto Protocol**

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

48. In its NC8 Greece reported that the implementation of the Kyoto Protocol is underpinned by law 4345/2015. The overall responsibility for climate change policymaking lies with MEEN, which is the governmental body responsible for the coordination of competent ministries and any other public or private entities involved in the implementation of the provisions of the Kyoto Protocol and for the formulation and monitoring of the national PaMs. MEEN is responsible for formulating policies concerning environmental protection, energy, climate change and forestry; coordinating implementation efforts; and ensuring compliance with the current legislative framework. For this purpose, MEEN cooperates both with other competent ministries and with regional, prefectural and local authorities.

49. For the second commitment period of the Kyoto Protocol, from 2013 to 2020, Greece committed to contributing to the joint EU effort to reduce GHG emissions by 20 per cent below the base-year level (see paras. 24–25 above).

50. The Party has arrangements and enforcement procedures to meet its commitments under the Kyoto Protocol, including procedures for addressing non-compliance. These include the annual reporting and compliance cycle of EU ETS operators, whose rules on enforcement and administrative procedures are publicly available. For ESD emissions, the corrective actions are included in article 7 of EU decision 406/2009/EC. Overall checks for compliance with EU regulations are carried out by the relevant bodies and agencies of the competent authorities, as appropriate, in the context of their remit. In cases of infringement of the provisions of EU regulations by legal or natural entities of the public and private sectors, sanctions are imposed by the relevant bodies and agencies of the competent authorities.

51. Greece has provisions in place to make information on legislative arrangements and administrative procedures related to compliance and enforcement publicly accessible, such as through the websites of the UNFCCC secretariat, the European Environment Agency and MEEN.

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

52. The ERT assessed the information reported in the NC8 of Greece and recognized that the reporting is complete and transparent, and thus adheres to the reporting guidelines for supplementary information. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

## **4. Policies and measures in accordance with Article 2 and minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol**

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

53. In the NC8 Greece reported information on how it strives to implement PaMs under Article 2 of the Kyoto Protocol in such a way as to minimize adverse effects, including the adverse effects of climate change and effects on international trade and social, environmental and economic impacts on other Parties, especially developing country Parties.

54. The formulation of climate policy in Greece follows EU policy, which takes into account the minimization of the adverse effects of emission reduction PaMs in accordance with Article 4, paragraphs 8–9, of the Convention and Article 2 of the Kyoto Protocol. Impacts on third countries are mostly indirect and can frequently neither be directly attributed to a specific EU policy nor directly measured by the EU. Therefore, the reported information covers potential adverse social, environmental and economic impacts, including trade impacts, that result from complex assessments of indirect influences and that are based on accessible data sources in developing countries.

55. The NC8 includes information on the steps taken at the EU level to implement decisions of ICAO and IMO to reduce GHG emissions, specifically including emissions from aviation in the EU ETS and the EU strategy to include emissions from maritime transport in the EU policy for reducing its overall emissions. However, Greece did not provide specific information on activities at the national level to promote or implement decisions of ICAO and IMO in order to limit or reduce emissions of GHGs not controlled by the Montreal Protocol from aviation and marine bunker fuels. During the review, Greece provided the ERT with its national action plans to promote or implement ICAO and IMO decisions.

56. Further information on how Greece strives to implement its commitments under Article 3, paragraph 14, of the Kyoto Protocol in such a way as to minimize adverse social, environmental and economic impacts on developing country Parties was reported in the 2023 annual submission. Greece reported that its policies are directly related to the implementation of EU policies at the national level. An impact assessment at EU level is carried out for every new EU policy initiative and taken into consideration during the adoption process of the relevant legislation. Greece, as an EU member State, participates in the development and adoption process of EU policies. The European Commission is required to take the impact assessment reports into account when taking its decisions, while impact assessments are also presented and discussed during the scrutiny of legislative proposals from the European Council and the European Parliament. This approach ensures that potential adverse social, environmental and economic impacts on developing country Parties are identified and minimized within the legislative process.

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

57. The ERT assessed the information reported in the NC8 of Greece and identified an issue relating to transparency and thus adherence to the reporting guidelines for supplementary information. The finding is described in table I.4.

**E. Estimates of emission reductions and removals and the use of units from market-based mechanisms and land use, land-use change and forestry and progress in achieving the quantified economy-wide emission reduction target**

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

58. Greece reported in its BR5 that it did not 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 2019 or 2020. Given that the contribution of LULUCF activities is not included in the joint EU target under the Convention, reporting thereon is not applicable to Greece. Table 6 illustrates Greece’s ESD emissions and use of units from market-based mechanisms for achieving its ESD target.

Table 6

**Summary of information on emissions covered by the European Union effort-sharing decision annual emission allocation and use of units from market-based mechanisms by Greece**(kt CO<sub>2</sub> eq)

<i>Year</i>	<i>ESD emissions</i>	<i>AEA</i>	<i>Use of units from market-based mechanisms</i>	<i>AEAs transferred to (–) or from (+) other Parties</i>	<i>Annual AEA surplus/deficit</i>	<i>Cumulative AEA surplus/deficit</i>
2013	44 184.59	58 955.03	NA	NA	14 770.43	14 770.43
2014	44 409.92	59 281.85	NA	NA	14 871.93	29 642.36
2015	45 449.37	59 608.67	NA	NA	14 159.29	43 801.65
2016	44 897.20	59 935.49	NA	NA	15 038.29	58 839.94
2017	45 445.29	59 131.33	NA	NA	13 686.04	72 525.98
2018	44 694.51	59 437.29	NA	NA	14 742.78	87 268.75
2019	44 744.95	59 743.24	NA	NA	14 998.29	102 267.05
2020	42 893.86	60 049.19	NA	NA	17 155.34	119 422.38

*Sources:* Greece's BR5 and BR5 CTF table 4(b), information provided by the Party during the review and EU transaction log (AEAs).

*Note:* For a given year, a positive number (surplus) indicates that annual or cumulative ESD emissions were lower than the corresponding AEA or cumulative AEAs, while a negative number (deficit) indicates that annual or cumulative ESD emissions were higher than the corresponding AEA or cumulative AEAs.

## 2. Assessment of adherence to the reporting guidelines

59. The ERT assessed the information reported in the BR5 of Greece and recognized that the reporting is complete and transparent, and thus adheres 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. Assessment of achievement of the quantified economy-wide emission reduction target

60. In assessing the Party's contribution towards achievement of the 2020 joint EU target on the basis of the information reported in its BR5, the ERT noted that, under the EU 2020 climate and energy package, Greece committed to reducing its emissions under the ESD to 4 per cent below the 2005 level by 2020 (see para. 29 above). This target has been translated into binding quantified AEAs for 2013–2020. In 2020 Greece's ESD emissions were 28.6 per cent (17,155.34 kt CO<sub>2</sub> eq) below the AEA. Greece has a cumulative surplus of 119,422.38 kt CO<sub>2</sub> eq with respect to its AEAs between 2013 and 2020. The ERT noted that the Party did not make use of units from market-based mechanisms in 2020.

61. The ERT noted that the Party reported that the total GHG emissions excluding LULUCF of the EU and including the use of units from market-based mechanisms do not exceed the emission level corresponding to the target in 2020, and thus that the EU has achieved its joint target. Therefore, the ERT concluded that, on the basis of the information reported in the BR5 and provided during the review, Greece has met its 2020 commitment under the Convention through its contribution to achieving the joint EU target. See the report on the review of the BR5 of the EU for further details.

## F. Projections

### 1. Projections overview, methodology and results

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

62. Greece reported in its BR5 and NC8 updated projections for 2020–2040 relative to actual inventory data for 2019 under the WEM scenario. The WEM scenario reported by Greece includes PaMs implemented and adopted until 2019.

63. In addition to the WEM scenario, Greece also reported the WAM scenario. The WAM scenario includes planned PaMs. Greece provided a definition of its scenarios, explaining that its WEM scenario includes policies such as forest management plans under the Kyoto



Protocol and the National Climate Law, which includes provisions on electric vehicles, investment in the country's power grid and development of the renewable energy sector. Its WAM scenario includes policies specified in the 2019 National Energy and Climate Plan, comprising a road map to achieve concrete energy and climate goals by 2030 as well as a national reforestation plan and an increase in woody energy crops in the LULUCF sector. The definitions indicate that the scenarios were prepared in accordance with the UNFCCC reporting guidelines on BRs. Greece did not report a WOM scenario.

64. 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 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. Greece reported on factors and activities affecting emissions for each sector. Projections for total national GHG emissions (excluding LULUCF), and their split between the EU ETS and ESD sectors, are presented for years between 2020 and 2040 in five-year intervals. Greece also reported projections for the emissions of indirect GHGs (nitrogen oxides, sulfur oxides, non-methane volatile organic compounds, fine particulate matter, ammonia and black carbon) for 2020–2040.

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

65. The methodology used for the preparation of the projections is identical to that used for the preparation of the emission projections for the NC7. The projections for the energy sector are based on models used for official energy planning (the Integrated MARKAL-EFOM System model in combination with PropSim), while spreadsheet models were used for the non-energy sectors. Greece did not provide information on changes since the submission of its NC7 in the assumptions, methodologies, models and approaches used for the projection scenarios.

66. To prepare its projections, Greece relied on key underlying assumptions relating to GDP, population, the EU ETS price for CO<sub>2</sub> and the international price for oil, natural gas and coal for 2020, 2025, 2030 and 2040, which are presented in CTF table 5. Historical values for these key parameters were not reported. The assumptions were updated on the basis of the most recent economic developments known at the time of the preparation of the NC8 and BR5, which are also aligned with the 2019 National Energy and Climate Plan, which was used to prepare the projections. Greece relied on the assumption of an increase in GDP from EUR 200.08 billion in 2020 to EUR 295.42 billion in 2040, a decrease in population from 10.69 million people in 2020 to 10.03 million people in 2040, increases in the prices of oil, coal and natural gas by 60.8, 46.7 and 53.2 per cent respectively between 2020 and 2040 and an increase in the EU ETS carbon price from EUR 24.00/t CO<sub>2</sub> in 2020 to EUR 51.70/t CO<sub>2</sub> in 2040.

67. A sensitivity analysis was conducted for the GHG emission projections for the energy sector, which encompassed the three additional scenarios that were the scenarios reported in the sensitivity analysis of GHG projections in the NC7. The sensitivity analysis included a WEM scenario from the NC7 and its two variants with different growth trends of final energy consumption across various demand sectors. Other differentiating variables used in the scenarios include the CO<sub>2</sub> emission allowances and the percentage of RES in the gross final energy consumption. A sensitivity analysis for non-energy sectors was not conducted.

68. Greece reported 2020 and 2030 as projected years in CTF tables 6(a) and 6(c), using 2019 as the last inventory year. In addition, Greece reported in the NC8 total national GHG emissions excluding LULUCF projected for 2020–2040 in five-year intervals. During the review Greece provided updated projections.

**(c) Results of projections**

69. The projected emission levels under different scenarios and information on the quantified economy-wide emission reduction target are presented in table 7 and figure 1.

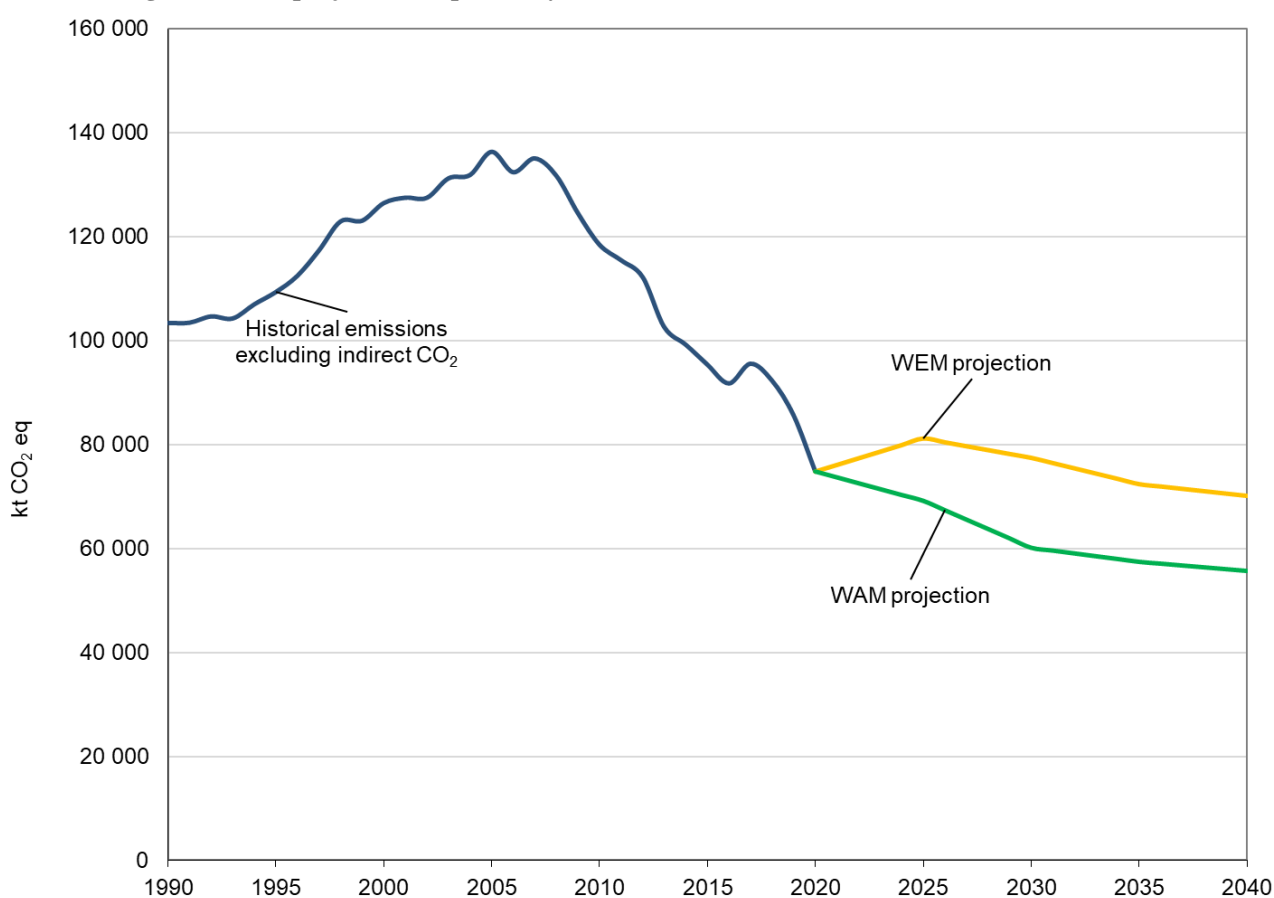
Table 7  
**Summary of greenhouse gas emission projections for Greece**

	<i>GHG emissions (kt CO<sub>2</sub> eq/year)</i>	<i>Change in relation to 1990 level (%)</i>	<i>Change in relation to 2020 level (%)</i>
Inventory data 1990	103 450.64	NA	NA
Inventory data 2020	74 835.61	-27.7	NA
WEM projections for 2030	77 495.66	-25.1	3.6
WAM projections for 2030	60 109.34	-41.9	-19.7
WEM projections for 2040	70 124.25	-32.2	-6.3
WAM projections for 2040	55 634.47	-46.2	-25.7

Sources: Greece’s BR5 CTF table 1 (inventory data) and the NC8 and BR5 (projections). Updated projections were provided by Greece during the review.

Note: The projections are of GHG emissions excluding LULUCF.

Figure 1  
**Greenhouse gas emission projections reported by Greece**



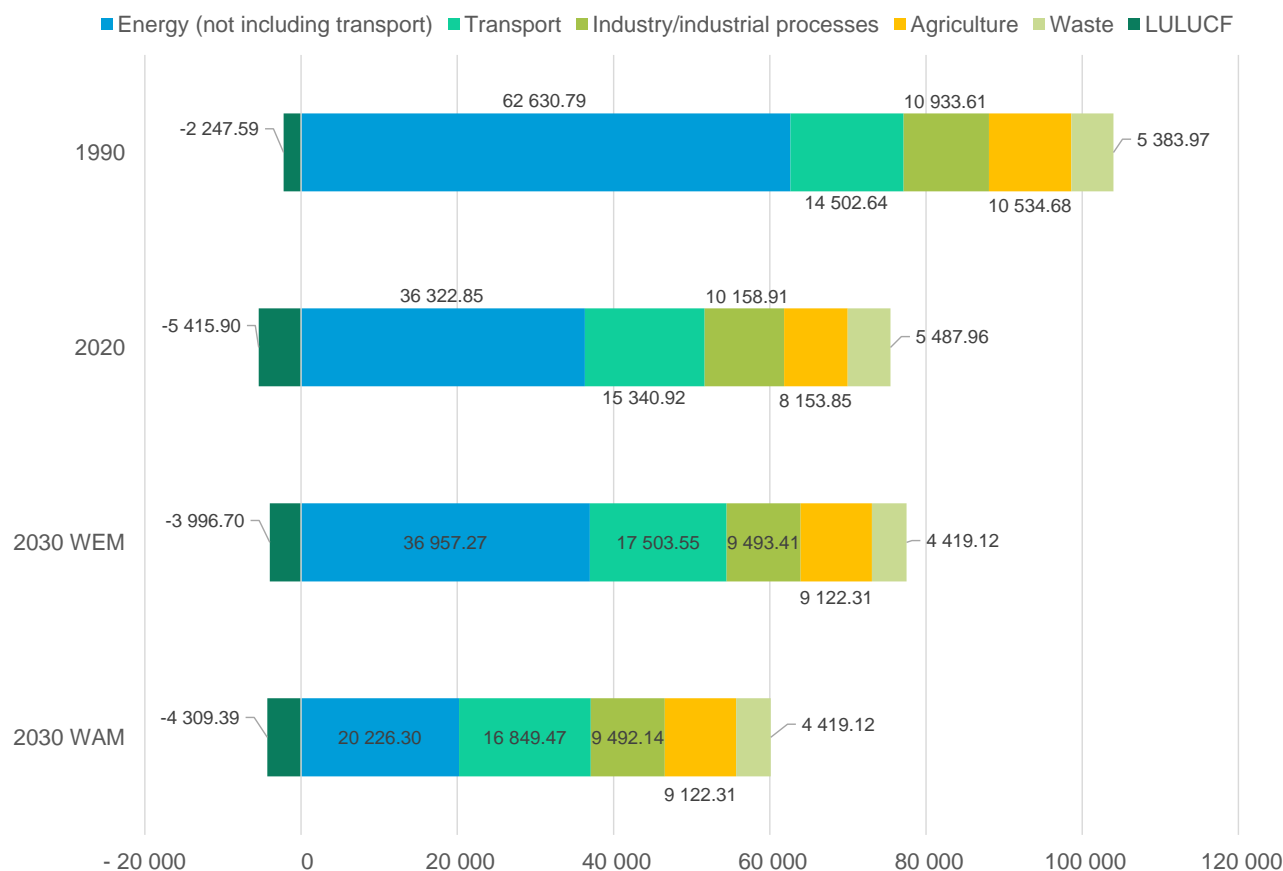
Sources: Greece’s BR5 and BR5 CTF tables 1 and 6 (total GHG emissions excluding LULUCF). Updated projections were provided by Greece during the review.

70. Greece’s total GHG emissions excluding LULUCF are projected under the WEM scenario to decrease by 25.1 per cent below the 1990 level in 2030. When including LULUCF, total GHG emissions are projected under the WEM scenario to decrease by 27.5 per cent below the 1990 level in 2030. Under the WAM scenario, emissions in 2030 are projected to be lower than those in 1990 by 41.9 per cent excluding LULUCF. When including LULUCF, total GHG emissions under the WAM scenario are projected to decrease by 44.9 per cent.

71. Greece presented the WEM and WAM scenarios by sector for 2030, as summarized in figure 2 and table 8.

Figure 2  
Greenhouse gas emission projections for Greece presented by sector

(kt CO<sub>2</sub> eq)



Sources: Greece's BR5 CTF table 1 (inventory data) and tables 6(a) and 6(c) (projections).

Table 8  
Summary of greenhouse gas emission projections for Greece presented by sector

Sector	GHG emissions and removals (kt CO <sub>2</sub> eq)			Change (%)	
	1990	2030		1990–2030	
		WEM	WAM	WEM	WAM
Energy (not including transport)	62 519.73	36 957.27	20 226.30	–40.9	–67.6
Transport	14 519.57	17 503.55	16 849.47	20.6	16.0
Industry/industrial processes	11 277.14	9 493.41	9 492.14	–15.8	–15.8
Agriculture	10 269.39	9 122.31	9 122.31	–11.2	–11.2
LULUCF	–2 107.91	–3 996.70	–4 309.39	–89.6	–104.4
Waste	4 864.81	4 419.12	4 419.12	–9.2	–9.2
Other	NO	NO	NO	NA	NA
<b>Total GHG emissions excluding LULUCF</b>	<b>103 450.64</b>	<b>77 495.66</b>	<b>60 109.34</b>	<b>–25.1</b>	<b>–41.9</b>

Sources: Greece's BR5 CTF tables 1 (inventory data) and tables 6(a) and 6(c) (projections).

72. According to the projections reported for 2030 under the WEM scenario, the most significant absolute emission reductions are expected to occur in the energy sector (not including transport), amounting to projected reductions of 40.9 per cent between 1990 and 2030, mainly driven by an increased share of renewable energy and phasing out of lignite for electricity generation. GHG emission reductions in the IPPU, agriculture and waste sectors

are projected to be 15.8, 11.2 and 9.2 per cent respectively, driven by reduced carbon intensity of electricity, EU regulations on fluorinated gases, increasing waste recycling rates and a projected change in fertilizer use. However, emissions in the transport sector are projected to increase by 20.6 per cent between 1990 and 2030 owing to an increased volume of traffic, while carbon removals in the LULUCF sector are projected to increase by 89.6 per cent in the same period in the WEM scenario as a result of the national reforestation plan and increased biomass production.

73. Projected emissions in the energy sector reported for the WAM scenario reduce even faster, by 67.6 per cent between 1990 and 2030, while the transport sector emissions in the WAM scenario still increase but at a slower rate than in the WEM scenario, by 16.0 per cent by 2030. Additional measures are also envisaged in the LULUCF sector, increasing the carbon sinks by 104.4 per cent between 1990 and 2030. Projected emissions from the IPPU, agriculture and waste sectors in the WAM scenario are the same as in the WEM scenario.

74. Greece presented the WEM and WAM scenarios by gas for 2030, as summarized in table 9.

Table 9

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

<i>Gas<sup>a</sup></i>	<i>GHG emissions and removals (kt CO<sub>2</sub> eq)</i>			<i>Change (%)</i>	
	<i>1990</i>	<i>2030</i>		<i>1990–2030</i>	
		<i>WEM</i>	<i>WAM</i>	<i>WEM</i>	<i>WAM</i>
CO <sub>2</sub>	83 438.04	58 893.61	41 905.11	–29.4	–49.8
CH <sub>4</sub>	11 155.52	10 120.99	9 787.63	–9.3	–12.3
N <sub>2</sub> O	7 481.08	4 930.95	4 866.49	–34.1	–34.9
HFCs	1 182.82	3 434.44	3 434.44	190.4	190.4
PFCs	190.26	110.00	110.00	–42.2	–42.2
SF <sub>6</sub>	2.93	5.67	5.67	93.5	93.5
NF <sub>3</sub>	NO	NO	NO	NA	NA
<b>Total GHG emissions without LULUCF</b>	<b>103 450.64</b>	<b>77 495.66</b>	<b>60 109.34</b>	<b>–25.1</b>	<b>–41.9</b>

Sources: Greece’s BR5 CTF table 1 (inventory data) and tables 6(a) and 6(c) (projections).

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

75. Emission projections for all sectors were developed using the same models as used for the BR4, with updated assumptions to reflect the recent projected trends in GDP growth, fuel and carbon prices, and population.

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

76. The ERT assessed the information reported in the NC8 and BR5 of Greece and identified issues relating to completeness and transparency, and thus adherence to the UNFCCC reporting guidelines on NCs. The findings are described in tables I.2 and II.2.

**2. Assessment of the total effect of policies and measures**

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

77. In its NC8 Greece presented the estimated and expected total effect of implemented and adopted PaMs, in accordance with the WEM scenario, compared with a situation without such PaMs. Information is presented in terms of GHG emissions avoided or sequestered, by gas (on a CO<sub>2</sub> eq basis), in 2020, 2025 and 2030. It also presented relevant information on factors and activities for each sector for 2015–2030.

78. Greece reported that the total estimated effect of its implemented and adopted PaMs is 40,857 kt CO<sub>2</sub> eq in 2025 and 43,921 kt CO<sub>2</sub> eq in 2030. According to the information reported in its NC8, PaMs implemented in the energy sector will deliver the largest emission reductions. Greece also reported the total estimated effect of planned PaMs as 11,629 kt CO<sub>2</sub>

eq in 2025 and 16,990 kt CO<sub>2</sub> eq in 2030. Table 10 provides an overview of the total effect of PaMs as reported by Greece.

Table 10

**Projected effects of Greece’s planned, implemented and adopted policies and measures in 2025 and 2030**  
(kt CO<sub>2</sub> eq)

Sector	2025		2030	
	Effect of implemented and adopted measures	Effect of planned measures	Effect of implemented and adopted measures	Effect of planned measures
Energy (without transport)	31 692	11 357	33 655	16 058
Transport	1 302	146	1 394	619
Industry/industrial processes	1 150	NE	1 700	NE
Agriculture	1 000	NE	1 300	NE
Land-use change and forestry	4 063	126	4 122	313
Waste management	1 650	NE	1 750	NE
<b>Total</b>	<b>40 857</b>	<b>11 629</b>	<b>43 921</b>	<b>16 990</b>

Source: Greece’s NC8.

Note: The total effect of implemented and adopted PaMs is defined as the sum of the effects of individual PaMs; the total effect of planned PaMs is defined as the sum of the effects of individual planned PaMs.

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

79. The ERT assessed the information reported in the NC8 of Greece and identified issues relating to completeness and transparency, and thus adherence to the UNFCCC reporting guidelines on NCs. The findings are described in tables I.2 and II.2.

**3. Supplementary relating to the mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol**

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

80. In the NC8 Greece provided information on how its use of the mechanisms under Articles 6, 12 and 17 of the Kyoto Protocol is supplemental to domestic action.

81. Within the EU, supplementary obligations under the Kyoto Protocol require that any international credit purchases by member States are in addition to emission abatement action taken domestically. Flexible mechanisms can be used by operators under the EU ETS and by governments to achieve their Kyoto Protocol targets.

82. Greece fulfilled its Kyoto Protocol target for the first commitment period on the basis of domestic PaMs (including the EU ETS). For the second commitment period, Greece will not use credits from flexible mechanisms for its ESD target, although EU ETS operators may use international credits subject to quantitative and qualitative limits.

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

83. The ERT assessed the information reported in the NC8 of Greece and recognized that the reporting is complete and transparent, and thus adheres to the reporting guidelines for supplementary information. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

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

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

#### **(a) Approach and methodologies used to track support provided to non-Annex I Parties**

84. In its NC8 Greece reported information on its provision of financial, technological and capacity-building support to non-Annex I Parties. Greece did not report textually on this information in its BR5 and noted that all relevant required information is provided in the corresponding sections of the NC8 and in the CTF tables.

85. Greece has provided support that it considers “new and additional”. Its definition of “new and additional” is support that was committed after preparation of and not included in the previous NC or BR. Greece’s process for determining resources to be “new and additional” is through its annual national budgeting process, which ensures that these resources are committed after the submission of the previous NC or BR and are therefore not included therein. Hence, each annual commitment constitutes “new and additional” resources.

86. Greece reported on the support that it has provided to non-Annex I Parties, distinguishing between support for mitigation and adaptation activities and identifying the capacity-building elements of such support. The Party explained that it adapted the operational definitions and criteria for eligibility used for the Organisation for Economic Co-operation and Development’s Development Assistance Committee policy markers in order to define mitigation and adaptation activities. Greece also reported that it identified the capacity-building elements of its activities by adapting the Convention definition of capacity-building activities.

87. Greece’s national approach to tracking the provision of support, including information on indicators, delivery mechanisms used and allocation channels tracked, is based on the Rio markers. The Party used the Rio markers to categorize the purpose of the assistance. Funds are classified and tracked per channel of delivery, type of flow, type of finance, geographical region, recipient countries, type of aid, sector of aid and SDG targets. The Party translated the Rio marker data into climate finance flows by transforming the marker of the mitigation or adaptation activity, which can be scored as “principal”, “significant” or “not targeted”, into the corresponding share of financial support (100, 40 or 0 per cent respectively).

88. Greece’s methodology and underlying assumptions used for collecting and reporting information on financial support, including underlying assumptions, guidelines and eligibility criteria, are also based on the Rio markers indicators (Organisation for Economic Co-operation and Development, 2012). The ERT noted an improvement in the description and reporting of this methodology compared with the NC7, including information on how Rio markers are used to estimate and report financial support and how the methodology is used in different member countries of the Organisation for Economic Co-operation and Development.

89. Hellenic Aid has a system in place to track, measure and record the climate change related public assistance provided to developing countries. Greece reported that it does not have a system in place to track private financial flows, as the emphasis is on tracking the public financial flows associated with climate change.

#### **(b) Financial resources**

90. Greece reported in its NC8 and BR5 information on its provision of financial support to non-Annex I Parties as required under the Convention, including on financial support disbursed, allocation channels and annual contributions.

91. Greece noted that the environment and climate change are priority thematic areas. The overall responsibility for development cooperation lies with the Ministry of Foreign Affairs, in which Hellenic Aid is located. Hellenic Aid is the national authority and coordinating mechanism for planning and shaping development cooperation strategy and is responsible for promoting, managing and implementing the national policy on development cooperation.

Law 4781/2021, on development cooperation policy and the organizational structure of Hellenic Aid, has recently been adopted. Greece has approved a four-year strategy for its development cooperation for 2022–2025.

92. Greece noted that it continued in 2017, and up to mid-2018, to have its economy supported by a mechanism backed by the European Commission, the European Central Bank and the International Monetary Fund. Greece reported that, owing to the economic crisis from 2011 to 2017 and the cuts in its national budget, it has gradually adopted a more pragmatic strategic approach to its development aid programme, which now focuses primarily on multilateral contributions. These contributions are expected to have a positive impact regarding the achievement of one or more of the SDGs. Greece remarked that it is committed, as both a United Nations Member State and an EU member State, to the global partnership to eradicate extreme poverty and to contribute financially to the achievement of the SDGs.

93. Greece only reported disbursed funds, not those committed and pledged. Greece does not currently provide information to developing countries on predicted financial flows, as it would be difficult to do so accurately. However, it takes into account the need for adequacy and predictability in the flow of the provided resources for the future. As the economy recovers, it is expected that Greece’s ODA and subsequently the climate finance provided to developing countries will grow. The recently approved four-year strategy for its development cooperation for 2022–2025 plans to increase financial, technological and capacity-building support to non-Annex I Parties.

94. Greece reported that it ensures that the areas selected for the provision of support (e.g. finance and capacity-building) address existing and emerging needs identified by non-Annex I Parties either through assessments provided by an existing network or through direct communication with the countries in question. Furthermore, Greece reported that, in the context of its two existing trilateral collaborations, it responds to the existing and emerging needs identified by the competent authorities of the two non-Annex I countries involved: Egypt and Israel.

95. Greece reported that the financial support provided through multilateral channels is aimed at assisting non-Annex I Parties in mitigating GHG emissions and adapting to the adverse effects of climate change and any economic or social consequences of response measures, in line with the scope, priorities and strategic plans of the recipient international organizations. Greece also reported that it contributes to EU funds that aim to assist non-Annex I Parties to adapt to any economic or social consequences of response measures.

96. Table 11 summarizes the information reported by Greece on its provision of financial support.

Table 11

**Summary of information on provision of financial support by Greece in 2019–2020**

(Thousands of United States dollars)

<i>Allocation channel of public financial support</i>	<i>Disbursement in 2019–2020</i>
Climate-specific contributions through multilateral channels, including:	2 029.39
Financial institutions, including regional development banks	1 784.58
United Nations bodies	244.82
Climate-specific contributions through bilateral, regional and other channels	14.86

*Sources:* Greece’s BR5 CTF tables and Query Wizard for International Development Statistics, available at <http://stats.oecd.org/qwids/>.

97. Greece’s climate-specific public financial support<sup>9</sup> totalled USD 2,044.25 thousand in 2019–2020, which is a decrease of 78.8 per cent since the BR4 (2017–2018).<sup>10</sup> The ERT noted that this decrease in public financial support contrasts with the ODA trends reported in

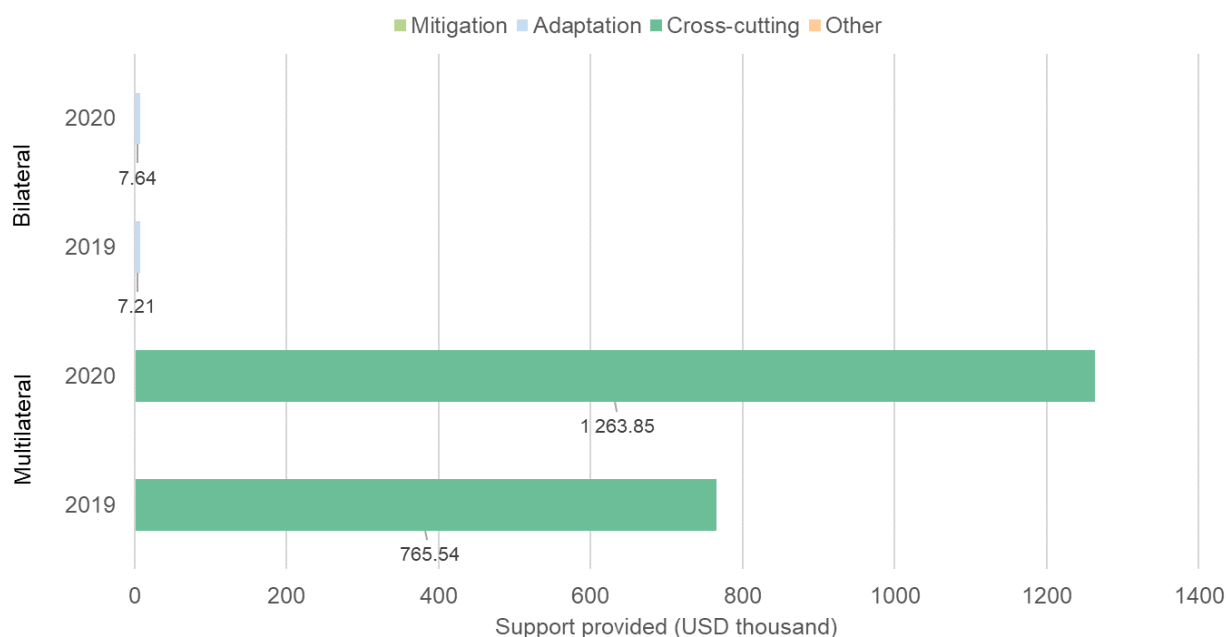
<sup>9</sup> For the remainder of this chapter, the term “financial support” means climate-specific financial support, unless otherwise noted.

<sup>10</sup> Comparisons with data from previous years have been calculated directly without adjusting for inflation.

the NC8, in which ODA was reported to have increased by 14 per cent in the biennium 2019–2020 compared with the biennium 2017–2018. The ERT noted that Greece provided in the NC8 more detailed textual information on the provision of ODA in general than on the provision of climate-specific support.

98. Greece contributed through multilateral channels USD 2,029.39 thousand in 2019–2020, which is a 78.7 per cent reduction compared with the previous biennium. Greece stated that a substantial part of its multilateral ODA is dedicated to organizations and/or programmes that aim to address global environmental issues and to support national sustainable development initiatives, including capacity-building activities related to the implementation of the Convention. In CTF table 7(a), Greece only reported multilateral financial support contributions to multilateral funds for the implementation of the Montreal Protocol on Substances that Deplete the Ozone Layer and the Convention. Greece reported that it has not committed to participate in subsequent replenishments of the Global Environment Facility after its fourth replenishment. During the review, Greece noted that a reconsideration of this decision is possible, depending on the recovery of the economy. Information on financial support from the public sector provided through multilateral and bilateral channels and the allocation of that support by target area is presented in figure 3 and table 12.

Figure 3  
Provision of support by Greece in 2019–2020



Sources: Greece’s BR5 CTF tables 7, 7(a) and 7(b).

Table 12  
Summary of information on channels of financial support reported by Greece  
(Thousands of United States dollars)

Allocation channel of public financial support	Amount disbursed in 2019–2020	Amount disbursed in 2017–2018	Change (%) <sup>a</sup>	Share of total (2019–2020) (%)
<b>Detailed information by type of channel</b>				
<b>Multilateral channels</b>				
Mitigation	–	–	–	–
Adaptation	–	–	–	–
Cross-cutting	2 029.39	9 528.32	–78.7	100.0
Other	–	–	–	–
<b>Total multilateral</b>	<b>2 029.39</b>	<b>9 528.32</b>	<b>–78.7</b>	<b>100.0</b>
<b>Bilateral channels</b>				
Mitigation	–	–	–	–



<i>Allocation channel of public financial support</i>	<i>Amount disbursed in 2019–2020</i>	<i>Amount disbursed in 2017–2018</i>	<i>Change (%)<sup>a</sup></i>	<i>Share of total (2019–2020) (%)</i>
Adaptation	14.86	–	–	100.0
Cross-cutting	–	92.93	–	–
Other	–	–	–	–
<b>Total bilateral</b>	<b>14.86</b>	<b>92.93</b>	<b>–84.0</b>	<b>100.0</b>
<b>Total multilateral and bilateral</b>	<b>2 044.25</b>	<b>9 621.25</b>	<b>–78.8</b>	<b>100.0</b>

Sources: Greece’s BR5 CTF tables 7, 7(a) and 7(b). Report on the technical review of Greece’s BR4 for 2017–2018 data.

<sup>a</sup> Note that variances in contribution amounts from year to year can occur that are not reflective of trends, owing to factors such as the biennial or triennial contribution cycles of some multilateral funds, the timing of approvals for individual bilateral projects or changes in exchange rates.

99. The Party reported information on the total financial support (USD 14.6 million) provided through bilateral and regional channels in 2019–2020, which represents a decrease of 84 per cent compared with the previous biennium. Greece reported only bilateral financial support contributions to the International Union for the Conservation of Nature’s account for the Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat. During the review, Greece explained that this contribution targets developing countries in the Middle East and North Africa and in Eastern Europe that are particularly vulnerable to the adverse effects of climate change. The amounts disbursed are reported in CTF table 7(b).

100. During the review, Greece noted that, in the framework of its four-year strategy for development cooperation for 2022–2025, bilateral development assistance programmes will be reinitiated and focused on a limited number of selected countries in Africa, the Middle East, the Balkans and the Black Sea region. The priority countries are Albania, Armenia, Egypt, Jordan, Libya, North Macedonia and Tunisia.

101. Greece provided information on article 50 of its national law 4369/2016, which allows part of the funds from auctions of EU ETS emission allowances to be allocated to assistance for developing countries. This changes the practice of using these funds only in Greece. During the review, the ERT was informed that EUR 400,000 from these funds will be allocated to support the establishment of a research centre for RES at the Technical University of Mombasa, Kenya, and to capacity-building and the transfer of know-how to the students of the university.

### (c) Technology development and transfer

102. Greece reported on its measures and activities related to technology transfer, access and deployment benefiting developing countries, including activities undertaken by the public sector. Greece’s major policy objectives concerning international environmental cooperation include building strong “beyond borders” partnerships with partner countries that face similar challenges and share common goals, through bilateral and trilateral technical cooperation schemes, especially in its geographical neighbourhood (i.e. the south-east Mediterranean and south-east Europe). Most of the reported projects related to technology development and transfer are carried out in the framework of the Organization of the Black Sea Economic Cooperation in the south European and Mediterranean regions.

103. Hellenic Aid finances projects in a number of developing countries that aim to facilitate access to, or the transfer of, environmentally sound technologies, and to promote the use of RES. Two Greek organizations are particularly active in technology transfer and capacity-building activities: the Energy Policy and Development Centre of the National and Kapodistrian University of Athens and the Hellenic Centre for Renewable Energy Sources.

104. CTF table 8 reports three supported activities, one of which is the Mitigation Enabling Energy Transition in the Mediterranean Region project, which encourages energy transition in south-east Mediterranean countries by enhancing the use of renewables and energy efficiency. Greece reported an extensive list of technology development and transfer and capacity-building activities developed from 2018 to 2021 in the NC8, describing the activities, their date of implementation, the responsible institutions and costs.

105. Eight other technology development and transfer projects were reported in table 7.4 of the NC8 compared with the information reported in CTF table 8, but they were implemented before the biennial reporting period (i.e. before 2019–2020) or are planned to be implemented after that period. Projects include countries outside of the above-mentioned prioritized regions, including Kenya and Sri Lanka, and two other projects for countries in Africa. The Technical Assistance Facility for the Sustainable Energy for All initiative in Africa is an EU project but implemented by the Hellenic Centre for Renewable Energy Sources.

106. The ERT noted that Greece reported in CTF table 8 one case of specific technological support to an Annex I Party, Turkey. The ERT recognized that many collaborative regional projects in which Greece participates involve Annex I and non-Annex I Parties jointly. The ERT notes that in accordance with the UNFCCC reporting guidelines on NCs, only financial, technological and capacity-building support to non-Annex I Parties should be reported.

**(d) Capacity-building**

107. Greece reported on its capacity-building support for mitigation, adaptation and technology aimed to respond to the existing and emerging needs identified by non-Annex I Parties in textual and tabular format. The textual information in the NC8 on capacity-building support was reported together with the information on technology development and transfer support, including the list referred to in paragraph 104 above.

108. Among the capacity-building support activities described in the NC8 are those developed in the framework of trilateral cooperation between Greece, Cyprus and Egypt and between Greece, Cyprus and Israel. In the Greece, Cyprus and Israel cooperation project, it was agreed to exchange best practices and experience gained for capacity-building at the country level on processes to adapt and implement the SDGs. In the Greece, Cyprus and Egypt cooperation project, a memorandum of understanding was signed between the three countries on education for sustainable development, in line with the SDGs.

109. Another important initiative is the Horizon 2020 Capacity Building/Mediterranean Environment Programme, which aimed to depollute the Mediterranean Sea by tackling the sources of pollution that account for around 80 per cent of the pollution.

110. The LIFE-IP AdaptInGR project is an important capacity-building initiative in which six adaptation capacity-building workshops were developed with the participation of experts from nine non-Annex I Parties in the Mediterranean region.

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

111. The ERT assessed the information reported in the NC8 and BR5 of Greece and identified issues relating to completeness and transparency, and thus adherence to the UNFCCC reporting guidelines on NCs and the UNFCCC reporting guidelines on BRs. The findings are described in tables I.3 and II.2.

**3. Reporting on finance, capacity-building and technology transfer information related to the Kyoto Protocol**

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

112. In its NC8 Greece reported its activities, actions and programmes undertaken in fulfilment of its commitments under Article 10 of the Kyoto Protocol. Greece provided information on steps taken to promote, facilitate and finance the transfer of technology to developing countries and to build their capacity in order to facilitate implementation of Article 10 of the Kyoto Protocol.

113. Greece provided information on steps taken, measures and activities related to technology transfer, access and deployment benefiting developing countries, including information on activities undertaken by the public sector.

114. The ERT took note of the information provided in CTF table 8 on recipient regions, target areas, measures and focus sectors of technology transfer programmes. Greece is actively engaged in efforts initiated by the Permanent International Secretariat of the

Organization of the Black Sea Economic Cooperation to promote cooperation and exchange of best practices for mitigation and adaptation of climate change, energy efficiency and green energy investments issues.

115. The ERT noted that Greece reported on several technology transfer projects and programmes under the EU Technical Assistance Facility for the Sustainable Energy for All initiative in western and central Africa and in eastern and southern Africa.

116. Greece provided information on its implementation of Article 11 of the Kyoto Protocol. As its economy recovers it is expected that Greece's ODA and subsequently the climate finance provided to developing countries will grow. The Party described how its contributions are "new and additional" (see para. 85 above). Support is considered to target climate-specific activities if it is provided bilaterally by Greece and is related to mitigation and/or adaptation to climate change or if it is provided to a regional, national or international environmental or scientific organization addressing and/or researching climate change, global warming or sustainability.

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

117. The ERT assessed the information reported in the NC8 of Greece and recognized that the reporting is complete and transparent, and thus adheres to the reporting guidelines for supplementary information. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

**H. Vulnerability assessment, climate change impacts and adaptation measures**

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

118. In its NC8 Greece provided information on the expected impacts of climate change in the country; the adaptation policies covering regional, sectoral and cross-sectoral vulnerabilities and considerations; and an outline of the action taken to implement Article 4, paragraph 1(b) and (e), of the Convention with regard to adaptation. Greece provided a description of climate change vulnerability and impacts on coastal zones, the mainland and islands, and highlighted the adaptation response actions taken and planned at different levels of government. For example, the impact on fir, beech and pine forest would be very significant, while the number and extent of forest fires would be increased. Species abundance and biodiversity are expected to decline. The adaptation response actions taken and planned for the forestry sector include acquiring and exploiting innovative knowledge; ensuring biodiversity of the forest ecosystem; managing natural resources in a sustainable manner; limiting forest fires; and producing usable water.

119. Greece has addressed adaptation matters through the adoption of the National Strategy for Adapting to Climate Change, which provided further direction to government agencies on enhancing preparedness for climate change. The strategy sets out the goals, principles and priorities of adaptation and lists potential adaptation measures for all environmental and socioeconomic sectors in order to address the risks and opportunities resulting from a changing climate. The strategy requires the 13 regional authorities of Greece to develop and implement regional adaptation action plans within a seven-year planning cycle. Such regional plans will identify and implement priority actions to address regional and local vulnerable sectors and areas. The strategy also envisions the establishment of a national climate change adaptation committee to coordinate and advise on adaptation policy design and implementation at the national level. The new National Climate Law provides a basis for setting up the necessary robust national policy framework for climate-resilient and low-carbon development. Table 13 summarizes the information on vulnerability and adaptation to climate change presented in the NC8 of Greece.

Table 13

**Summary of information on vulnerability and adaptation to climate change reported by Greece**

<i>Vulnerable area</i>	<i>Examples/comments/adaptation measures reported</i>
Agriculture and food security	<p>Vulnerability: Shorter growing season; higher risk of heat stress during the flowering period; extreme weather events during the growing period; higher risk of rainy days during the sowing season; higher rainfall intensity; longer dry spells.</p> <p>Adaptation: Establishment of the Rural Development Programme 2014–2020 and the National Strategy for Adapting to Climate Change. The strategy includes the acquisition of innovative knowledge and dissemination to trainers and final recipients; promotion of regional planning based on vulnerability levels; establishment or improvement of existing monitoring systems; sustainable management of natural resources; changes in cultivation technique and introduction of new plant varieties; and risk management of climate disasters.</p>
Biodiversity and natural ecosystems	<p>Vulnerability: A decrease in the population and variety of species; an increase in invasive alien species.</p> <p>Adaptation: Establishment of the National Biodiversity Strategy and the National Strategy for Adapting to Climate Change. The strategies include the following adaptation actions: improve knowledge of biodiversity and the impact of climate change on biodiversity and the ecosystem; enhance adaptation of biodiversity to the impacts of climate change; protect and restore natural ecosystems; prevent reduction and fragmentation of natural ecosystems; raise public awareness with education and training programmes and promotion of alternative forms of tourism; and incorporate impacts of climate change into biodiversity monitoring tools and planning.</p>
Coastal zones	<p>Vulnerability: Flooding and erosion; freshwater shortages; damage to coastal ecosystems.</p> <p>Adaptation: Establishment of a framework for spatial planning for the tourism sector and for coastal areas; establishment of the National Strategy for the Management of Water Resources; setting up of societies for the protection of species and national marine parks; specific measures for tourist destinations; and the establishment of the National Strategy for Adapting to Climate Change.</p>
Drought	<p>Vulnerability: Soil degradation; salinization.</p> <p>Adaptation: Establishment of the National Action Plan for Combating Desertification.</p>
Fisheries	<p>Vulnerability: Fluctuations in the populations of marine species.</p> <p>Adaptation: Establishment of binding fishing codes and the National Strategy for Adapting to Climate Change. The strategy encompasses enhancing knowledge of the impacts from climate change; adaptation to the new situation in the fisheries industry brought about by climate change; sustainable management of marine biological resources; understanding the action of the natural and ecological parameters that determine the mechanisms of the impact of climate change; assessing the economic impact of climate change; and educational programmes.</p>
Forests	<p>Vulnerability: Forest fires; floods; loss of forest biodiversity.</p> <p>Adaptation: Establishment of the Programme of Rural Development 2014–2020 and the National Strategy for Adapting to Climate Change. Actions under the strategy include the acquisition and exploitation of innovative knowledge; ensuring biodiversity of the forest ecosystem; sustainable management of natural resources; adapting the legislative framework regarding fires; modernizing firefighting equipment and enhancing fire prevention measures; and optimizing the use of water and construction of dams to reduce erosion and floods.</p>
Human health	<p>Vulnerability: At present, the effect of forest fires and floods and air pollution aggravated by extreme heatwaves.</p> <p>Adaptation: Dissemination of information from the General Secretariat for Civil Protection regarding floods and air pollution; raising of public awareness; establishment of the National Action Plan for the Response to Environmental Hazards Threatening Health and the National Strategy for Adapting to Climate Change. The strategy includes the Health Map, which is a mechanism for the continuous collection and processing of data on health and morbidity, and analysing impacts of climate change on transmissible diseases.</p>

<i>Vulnerable area</i>	<i>Examples/comments/adaptation measures reported</i>
Infrastructure and economy	<p>Vulnerability: Effect on tourism; loss of property from erosion; forest fires and floods.</p> <p>Adaptation: Establishment of the Rural Development Programme of Greece 2014–2020, the National Action Plan for Combating Desertification, the Greek National Tourism Organization and the National Strategy for Adapting to Climate Change. The strategy includes reviewing institutional arrangements and the decision-making process; adapting the legal framework and information technologies to lower the impacts of climate change on transport infrastructure; analysing impacts on the attractiveness and competitiveness of tourist destination areas; and analysing impacts on tourism unit costs and the cost of protection projects in basic tourism infrastructures.</p>
Water resources	<p>Vulnerability: Water quantity and quality.</p> <p>Adaptation: Establishment of the National Strategy for the Management of Water Resources, the National Biodiversity Strategy and the National Strategy for Adapting to Climate Change. These strategies encompass a geoportal of integrated information on the impacts of climate change; projects addressing the impacts of climate change; effective water use; development of land-use activities and uses that are compatible with local available water resources; inclusion of the impacts of climate change in water planning and management; assessment of the impacts of climate change on hydropower generation; and educational programmes.</p>

120. Greece provided a detailed description of international adaptation activities, including various initiatives, and cooperation with neighbouring countries. The National Strategy for Adapting to Climate Change emphasizes the importance of establishing communication channels with neighbouring countries. The National Strategy for Adapting to Climate Change outlines specific actions, such as identifying transboundary adaptation issues, developing common policies, establishing shared data-collection stations and providing training and capacity-building. The regional adaptation action plans assess climate impacts and promote international cooperation. Transboundary public consultations are conducted through the Strategic Environmental Assessment process.

121. Trilateral cooperation agreements between Greece, Cyprus and Israel and between Greece, Cyprus and Egypt prioritize cooperation on the exchange of knowledge and know-how on adaptation policy monitoring, evaluation and good practice at the regional and local level. The Greece–Cyprus bilateral cooperation programme and the Balkan Mediterranean initiative for adaptation focus on strengthening scientific collaboration and knowledge in order to address climate change adaptation matters (e.g. coastal erosion and early warning systems on drought and fire and an environmental risk management information system on floods). Examples of projects for enhancing bilateral and multilateral cooperation on adaptation actions include LIFE-IP AdaptInGR and LIFE Adapt2Clima. LIFE-IP AdaptInGR is aimed at replicating the results and sharing knowledge and experience acquired relating to monitoring adaptation policy implementation, developing climate projections, mainstreaming adaptation across sectoral policies and implementing concrete adaptation projects. The LIFE Adapt2Clima project developed a decision support system for demonstrating the impact of climate change on agriculture.

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

122. The ERT assessed the information reported in the NC8 of Greece and recognized that the reporting is complete and transparent, and thus adheres to the UNFCCC reporting guidelines on NCs. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

### **I. Research and systematic observation**

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

123. In its NC8 Greece provided information on its general policy and funding relating to research and systematic observation and both domestic and international activities, including contributions to the World Meteorological Organization and the Global Climate Observing System. Greece also provided information on the identification of opportunities for and

barriers to free and open international exchange of data and information and on action taken to overcome such barriers.

124. Greece has implemented international and domestic policies and programmes on climate change research, systematic observation and climate modelling that aim to advance capabilities to predict and observe the physical, chemical, biological and human components of the Earth's system over space and time. The General Secretariat for Research and Innovation, under the Ministry of Education and Religious Affairs, is responsible for supporting and promoting research in Greece. Various institutions conduct research on climate change related issues (e.g. forest fires, water management, coastal zones, biodiversity and new energy technologies). The main institutions conducting climate change research in Greece are the National Observatory of Athens, the Hellenic National Meteorological Service and the Aristotle University of Thessaloniki. Greece has established national cooperation among the Hellenic National Meteorological Service and universities, research institutes, government agencies, the Ministry of Rural Development and Food and the Athens Environmental Agency to improve services and promote research on climate change issues.

125. In terms of activities related to systematic observation, Greece reported on national plans, programmes and support for ground- and space-based climate observing systems, including satellite and non-satellite climate observation. The systematic observation of climatic parameters in Greece involves various institutions and organizations. These include the Hellenic National Meteorological Service, the Greek armed forces, the Ministry of Rural Development and Food, MEEN, the Ministry for Climate Crisis and Civil Protection and several national research centres. The Public Power Corporation of Greece operates meteorological stations near its power plants and dams. Greece is also a member of the European Organisation for the Exploitation of Meteorological Satellites, an organization responsible for the Meteosat meteorological observation satellites, and the European Space Agency. The Hellenic Centre for Marine Research is a member of the European Global Ocean Observing System.

126. The NC8 reflects actions taken to support capacity-building and the establishment and maintenance of observation systems and related data and monitoring systems in developing countries. Greece provided funding for scientists from developing countries working on global climate change research. Greece's support for developing countries in establishing and maintaining observing systems and related data and monitoring systems is channelled through the Geo-Cradle programme. The programme aims to facilitate the sustainable uptake and use of earth observation services in North Africa, the Middle East and the Balkans. Greece established the Geo-Cradle network and a regional networking platform to enhance coordination and collaboration among regional stakeholders.

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

127. The ERT assessed the information reported in the NC8 of Greece and recognized that the reporting is complete and transparent, and thus adheres to the UNFCCC reporting guidelines on NCs. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

## **J. Education, training and public awareness**

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

128. In its NC8 Greece provided information on its actions relating to education, training and public awareness at the domestic and international level. The Party provided information on the general policy on education, training and public awareness; primary, secondary and higher education; public information campaigns; training programmes; education materials; resource or information centres; the involvement of the public and non-governmental organizations; and its participation in international activities.

129. Environmental education is mandated by law in primary and secondary schools in Greece. Law 1982/90 established the institutions responsible for environmental education and created environmental education centres. A new school policy, based on inclusive

principles, prioritizes the role of students within the educational system and emphasizes all-day, digital, sustainable and innovative schools. The Educational Institute, through a unified cross-thematic curriculum framework, promotes interdisciplinary knowledge, enrichment of the curriculum with environmental topics and the connection between schools and society. Environmental education themes focus on protecting the natural, historical and social environment and addressing critical issues, such as climate change, air and water pollution, soil degradation, energy resources and forest management.

130. Environmental information and awareness initiatives in Greece encompass various tracks, including governmental efforts. These include establishing centres for environmental information in Balkan countries, funding programmes for environmental awareness and creating institutions such as the National Centre for Viable and Sustainable Development and the Special Service of Environmental Inspectors. During its annual chairing of the Human Security Network, Greece focused on raising global awareness about the human security implications of climate change in developing countries, particularly for vulnerable groups such as women, children and people who have been forced to migrate owing to climate change.

131. Non-governmental organizations and civil society organizations have demonstrated an interest in energy, climate change and environmental issues. They collaborate with the Government of Greece in addressing climate change issues by raising awareness and promoting good practices. They contribute, through their membership, sectoral representation and expertise in climate change mitigation and adaptation solutions.

132. Greece cooperates with partners at the international level and the regional level (with a focus on the Mediterranean) in environmental and sustainable development, with an emphasis on capacity-building, awareness-raising and sharing of experience. Greece, as a member State of the EU, is actively involved in EU–Africa cooperation initiatives at both the international and the regional level. Greece participates in the work of international organizations such as the United Nations Commission on Sustainable Development, the United Nations Development Programme and the United Nations Environment Programme, engaging in environmental protection and sustainable development cooperation, including education, training and awareness, with African countries.

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

133. The ERT assessed the information reported in the NC8 of Greece and recognized that the reporting is complete and transparent, and thus adheres to the UNFCCC reporting guidelines on NCs. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

## **III. Conclusions and recommendations**

134. The ERT conducted a technical review of the information reported in the NC8 of Greece in accordance with the UNFCCC reporting guidelines on NCs. The ERT concluded that the reported information mostly adheres to the UNFCCC reporting guidelines on NCs and that the NC8 provides an overview of the national climate policy of Greece.

135. The information provided in the NC8 includes all of the elements of the supplementary information under Article 7, paragraph 2, of the Kyoto Protocol. Greece reported on the national system, the national registry, supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol, PaMs in accordance with Article 2 of the Kyoto Protocol, domestic and regional programmes and/or legislative arrangements and enforcement and administrative procedures, information under Article 10 of the Kyoto Protocol, and financial resources provided to developing country Parties. Supplementary information under Article 7, paragraph 1, of the Kyoto Protocol on the minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol was provided by Greece in its 2023 annual submission.

136. The ERT conducted a technical review of the information reported in the BR5 and BR5 CTF tables of Greece in accordance with the UNFCCC reporting guidelines on BRs.

The ERT concluded that the reported information mostly adheres to the UNFCCC reporting guidelines on BRs and that the BR5 and its CTF tables provide 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 Greece towards achieving its target.

137. In its NC8 Greece reported on its key national circumstances related to GHG emissions and removals, including the main drivers of emissions in all sectors and the explanatory factors of the trends.

138. Greece's total GHG emissions excluding LULUCF covered by its quantified economy-wide emission reduction target were estimated to be 27.4 per cent below its 1990 level in 2020. Emissions peaked in 2005 and have decreased since then. Since the energy sector represents 69.2 per cent of the total national emissions in 2021, the changes in total emissions were driven mainly by factors such as mitigation actions in the energy sector and the economic recession.

139. As reported in the BR5, under the Convention Greece committed to contributing to the achievement of the joint EU quantified economy-wide target of a 20 per cent reduction in emissions below the 1990 level by 2020. The target covers all sectors and 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. Under the ESD Greece has a target of reducing its emissions by 4 per cent below the 2005 level by 2020.

140. The EU has a joint 2030 emission reduction target of at least 55 per cent below the 1990 level. This will be primarily implemented through the EU ETS and ESR, which have targets to reduce emissions by 2030 by 62 and 40 per cent respectively compared with the 2005 level. Under the ESR Greece has a target of reducing its emissions by 22.7 per cent below the 2005 level by 2030. The National Climate Law adopted in 2022 sets GHG emission reduction targets of 55 per cent by 2030 and 80 per cent by 2040 below the 1990 level and net zero emissions by 2050. In 2023, the Greek Government is preparing a revised national energy and climate plan to align with the newly adopted National Climate Law. The revised national energy and climate plan will include more ambitious targets for 2030 compared with both the previous 2019 National Energy and Climate Plan and the ESR target and a path for reaching climate neutrality by 2050.

141. The ERT noted that the total GHG emissions of the EU excluding LULUCF do not exceed the emission level corresponding to the target in 2020, and thus that the EU has achieved its joint target. The ERT therefore concluded that Greece has met its 2020 commitment under the Convention through its contribution to achieving the joint target of the EU. See the report on the review of the BR5 of the EU for further details. In 2020 Greece's ESD emissions were 28.6 per cent (17,155.34 kt CO<sub>2</sub> eq) below the AEA. Greece had a cumulative surplus of 119,422.38 kt CO<sub>2</sub> eq with respect to its AEAs between 2013 and 2020. The ERT noted that the Party met its 2020 ESD target because its ESD emissions in 2020 do not exceed its AEA for 2020.

142. The GHG emission projections provided by Greece in its NC8 and BR5 correspond to the WEM and WAM scenarios. Under the WEM scenario, GHG emissions in 2030 are projected to be 25.1 per cent below the 1990 level. Under the WAM scenario, emissions in 2030 are projected to be 41.9 per cent below the 1990 level.

143. Greece's main policy framework relating to energy and climate change is the 2019 National Energy and Climate Plan, published by MEEN in December 2019 pursuant to the EU regulation on the governance of the Energy Union and climate action. The Party described the mitigation actions that it has implemented to help it achieve its 2020 and longer-term targets, which include efficiency improvements in the energy sector, a switch to less carbon-intensive fuels in the energy supply system, an increase in renewable energy supply, energy efficiency improvements of buildings, energy efficiency improvements in the services sector and energy efficiency improvement of appliances through economic, fiscal and regulatory instruments.

144. Greece has provided climate financing, focusing primarily on multilateral contributions. It has reduced the level of its financial support since the BR4; its public



financial support in 2019–2020 totalled USD 2,044.25 thousand. For those years, Greece provided financial contributions to only three bodies: the Convention, the Montreal Protocol and the Ramsar Convention. The recently adopted four-year strategy for Greece's development cooperation for 2022–2025 plans to increase climate finance support, including by reinitiating the bilateral provision of climate support to individual developing countries.

145. Greece continued to provide support for technology development and transfer and capacity-building to developing countries. Priority for technological support was given to projects enhancing access to renewable energy. The capacity-building support covered adaptation and mitigation. Greece has had active cooperation with partner countries that face similar challenges and share common goals, especially in its geographic neighbourhood, around the Black Sea, in southern Europe and in the Mediterranean region. In this cooperation Greece has provided technological and capacity-building support to numerous non-Annex I Parties, such as Armenia, Bosnia and Herzegovina, Egypt, Lebanon and the Republic of Moldova.

146. In its NC8 Greece provided information on the expected impacts of climate change in the country; the adaptation policies covering regional, sectoral and cross-sectoral vulnerabilities and considerations; and an outline of the action taken to implement Article 4, paragraph 1(b) and (e), of the Convention with regard to adaptation. Greece adopted its National Strategy for Adapting to Climate Change in order to prioritize and implement an initial set of climate change adaptation actions, which will be revised, updated and realigned in the light of the latest information and developments. Greece has established bilateral and multilateral cooperation on the exchange of knowledge and know-how on adaptation policy monitoring, evaluation and good practice at the regional and local level.

147. In its NC8 Greece provided information on its activities relating to research and systematic observation. Greece has established national cooperation projects among various institutions in order to promote research and systematic observation on climate change issues. Greece's support for developing countries in establishing and maintaining observing systems and related data and monitoring systems is channelled through the Geo-Cradle programme.

148. In its NC8 Greece provided information on its actions relating to education, training and public awareness. Law 1982/90 and its subsequent updates mandate environmental education in primary and secondary schools and establish the necessary institutions to promote environmental education. Greece cooperates at the international, regional (with a focus on the Mediterranean) and bilateral level, focusing on capacity-building, awareness-raising and sharing of experience on climate actions.

149. In the course of the review, the ERT formulated the following recommendations for Greece to improve its adherence to the UNFCCC reporting guidelines on NCs in its next NC:

- (a) To improve the completeness of its reporting by:
  - (i) Including a brief description of the estimation methods used for the effect of each main policy or measure estimated, or explicitly provide references to studies or documents in which those methodologies can be found (see issue 1 in table I.1);
  - (ii) Including information on the support provided for the development and enhancement of the endogenous capacities and technologies of non-Annex I Parties and, where feasible, whether the activities related to technology transfer are considered successes or failures (see issue 4 in table I.3);
- (b) To improve the transparency of its reporting by:
  - (i) Providing consistent and updated information on projections in the relevant tables of its submission (see issue 2 in table I.2);
  - (ii) Reporting the total effect of PaMs extending at least 15 years from the most recent inventory year (see issue 6 in table I.2);
  - (iii) Reporting financial contributions to the Ramsar Convention as multilateral contributions (see issue 1 in table I.3).

150. In the course of the review of Greece's NC8, the ERT noted one finding relating to adherence to the reporting guidelines for supplementary information: an issue with the

transparency of information on the steps it has taken to promote and/or implement any decisions of ICAO and IMO in order to limit or reduce emissions of GHGs not controlled by the Montreal Protocol from aviation and marine bunker fuels at the national level (see issue 1 in table I.4).

151. In the course of the review of Greece’s BR5, the ERT noted the following findings relating to adherence to the UNFCCC reporting guidelines on BRs:

(a) Issues with the completeness of its reporting relating to information provided on the support provided for the development and enhancement of the endogenous capacities and technologies of non-Annex I Parties (see issue 4 in table II.2);

(b) Issues with the transparency of its reporting relating to:

(i) Consistency of the information provided on projections in the relevant tables of its submission (see issue 2 in table II.1);

(ii) Information on financial contributions to the Ramsar Convention reported as bilateral contributions (see issue 1 in table II.2).

## Annex I

### Assessment of adherence to the reporting guidelines for the eighth national communication of Greece

Tables I.1–I.4 summarize the ERT assessment of adherence to the UNFCCC reporting guidelines on NCs for Greece’s NC8.

Table I.1

#### Findings on policies and measures from the review of the eighth national communication of Greece

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation or encouragement
1	Reporting requirement specified in paragraph 20  Issue type: completeness Assessment: recommendation	The ERT noted that Greece did not report a brief description of the estimation methods of the impact of its PaMs, in accordance with paragraph 20 of the UNFCCC reporting guidelines on NCs.  During the review, the Party provided a study published by Sebos et al. (2021) on the quantification of GHG emission reductions from mitigation actions, but the study is not explicitly mentioned in the NC8 and BR5.  The ERT reiterates the recommendation from the previous review report for Greece to include in its next submission a description of the estimation methods used for each policy or measure reported that sufficiently describes each method, or explicitly provide references to studies or documents in which those methodologies can be found, such as the study published by Sebos et al. (2021) provided during the review.
2	Reporting requirement specified in paragraph 21  Issue type: completeness Assessment: encouragement	The ERT noted that Greece did not report on the costs of each policy and measure accompanied by a brief definition of the term “cost”, in accordance with paragraph 21 of the UNFCCC reporting guidelines on NCs.  During the review, Greece explained that PaMs are promoted through various economic instruments, which are being adjusted over time to meet the specific targets of the 2019 National Energy and Climate Plan. The total investment expenditure by 2030 has been estimated and reported in the 2019 National Energy and Climate Plan (p.321). Other studies, such as Stamopoulos et al. (2021), provide information about the investment cost needed up to 2030.  The ERT reiterates the encouragement from the previous review report for Greece to provide information on the costs of each policy and measure accompanied by a brief definition of the term “cost” in its next submission.

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

Table I.2

#### Findings on projections including aggregate effects of policies and measures reported in the eighth national communication of Greece

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation or encouragement
1	Reporting requirement specified in paragraph 25  Issue type: completeness Assessment: encouragement	Greece reported the GHG emission projections for the WEM and WAM scenarios in its NC8 and BR5 but did not include a WOM scenario.  During the review, the Party explained that the WOM scenario is not reported since it is not a mandatory requirement and suggested that the emissions for the WOM scenario can be quantified by deducting the aggregate effect of PaMs as shown in table 5.9 of the NC8 from the WEM emission projections.  The ERT reiterates the encouragement from the previous review report for the Party to include a WOM scenario in its next submission.
2	Reporting requirement specified in paragraph 26	Greece reported WEM and WAM projections disaggregated by sector and by gas in tables 5.1–5.4 of the NC8 and BR5 as well as in CTF tables 6(a) and 6(c). The ERT noted that the values presented in tables 5.1–5.4 of the NC8 and BR5 differ from those in CTF tables 6(a) and 6(c).

No.	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
	<p>Issue type: transparency</p> <p>Assessment: recommendation</p>	<p>During the review, Greece explained that there was an error in transferring data during the compilation of tables 5.1–5.4 of the NC8, and that the figures in CTF tables 6(a) and 6(c) should be treated as the most recent.</p> <p>The ERT recommends that Greece improve the transparency of its reporting by providing consistent and updated information on projections in the relevant tables of its submission.</p>
3	<p>Reporting requirement specified in paragraph 27</p> <p>Issue type: transparency</p> <p>Assessment: encouragement</p>	<p>The ERT noted that Greece presented its sensitivity analysis performed for the projection scenarios reported in the NC7. However, a sensitivity analysis for the updated projections reported in the NC8 was not conducted.</p> <p>During the review, Greece confirmed that the sensitivity scenarios presented in table 5.32 of the NC8 and BR5 include the 2017 WEM scenario from the NC7.</p> <p>The ERT encourages Greece to report an updated sensitivity analysis of the WEM scenario in its next submission.</p>
4	<p>Reporting requirement specified in paragraph 30</p> <p>Issue type: transparency</p> <p>Assessment: encouragement</p>	<p>Greece reported in its NC8 and BR5 projections relative to unadjusted inventory data from 2019. However, the ERT noted that in tables 5.1–5.4 of the NC8 and BR5 the Party presented the latest historical year as 2017.</p> <p>During the review, the Party explained that the base year for projections is 2019, as explained in sections 5.4.1 and 5.4.2 of the NC8 and BR5. The Party also explained that owing to an error, tables 5.1–5.4 of the NC8 and BR5 contained inventory data up to 2017 instead of 2019.</p> <p>The ERT encourages Greece to present its projections relative to the most recent annual inventory submission available.</p>
5	<p>Reporting requirement specified in paragraph 34</p> <p>Issue type: completeness</p> <p>Assessment: encouragement</p>	<p>Greece reported in tables 5.1–5.4 of its NC8 and BR5 projections for the WEM and WAM scenarios extending to 2020 and 2030. The ERT noted that 2020 and 2030 are less than 15 years from the most recent inventory year.</p> <p>During the review, the Party explained that the 2019 National Energy and Climate Plan is undergoing revisions to align it with the more ambitious targets set forth in the National Climate Law, which is expected to result in a significant increase in the effect of PaMs. Given that these revisions will be published in 2023, projections for 2035 have not yet been estimated.</p> <p>The ERT encourages Greece to include projection estimates extending at least 15 years from the most recent inventory year in its next submission.</p>
6	<p>Reporting requirement specified in paragraph 37</p> <p>Issue type: transparency</p> <p>Assessment: recommendation</p>	<p>Greece reported in table 5.9 of its NC8 and BR5 the total effect of its PaMs currently implemented and adopted, in terms of GHG emissions avoided or sequestered by gas, on a CO<sub>2</sub> eq basis, for 2020, 2025 and 2030, which is less than 15 years from the most recent inventory year.</p> <p>During the review, the Party explained that the 2019 National Energy and Climate Plan is undergoing revisions to align it with the more ambitious targets set forth in the National Climate Law, which will result in a significant increase in the aggregate effect of PaMs. Given that these revisions will be published in 2023, the 2035 aggregate effect has not yet been estimated.</p> <p>The ERT recommends that Greece report the total effect of its PaMs extending at least 15 years from the most recent inventory year in its next submission.</p>
7	<p>Reporting requirement specified in paragraph 40</p> <p>Issue type: transparency</p> <p>Assessment: encouragement</p>	<p>Greece reported the methodology used for the GHG emission projections in the energy and non-energy sectors in sections 5.4.1 and 5.4.2 of the NC8 and BR5. The ERT noted that for the energy sector, the Party reported information fully describing the characteristics, original purpose and strengths of the model used in this sector. The projections are presented in CO<sub>2</sub> eq. However, it was not clear to the ERT whether all the relevant GHGs were estimated using these methods, what the weaknesses of each of the two approaches (for the energy sector and non-energy sectors) are and how the Party accounts for any overlap or synergies that may exist between different PaMs.</p> <p>During the review, the Party clarified that in the non-energy sectors it used spreadsheet models to project GHG emissions, based on assumptions consistent with the latest GHG inventory. A detailed description of the assumptions on growth rates and other parameters is reported in subsections of section 5.4.2 of the NC8 and BR5.</p>

<i>No.</i>	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
		The ERT encourages Greece to include information on whether all the GHGs were estimated using the energy and non-energy approaches for GHG projections, the weaknesses of each of the two approaches and how it accounts for any overlap or synergies that may exist between different PaMs in its next submission.
8	Reporting requirement specified in paragraph 41 Issue type: completeness Assessment: encouragement	Greece reported information on the methodology used to estimate emission projections for the energy and non-energy sectors in sections 5.4.1 and 5.4.2 of the NC8 and BR5. However, the ERT noted that no further references to more detailed information were provided. During the review, the Party provided further references and links to models and methodologies used for estimating emission projections. The ERT encourages Greece to provide further references to more detailed information related to each model or approach used for GHG emission projections in its next submission.
9	Reporting requirement specified in paragraph 42 Issue type: completeness Assessment: encouragement	Greece did not report in its NC8 and BR5 the main differences in assumptions, methods employed and results between the projections reported in the NC8 and those reported in previous NCs. During the review, the Party clarified that the same macroeconomic assumptions were used in both the BR4 and the NC8 and BR5, as both sets of projections were based on the 2019 National Energy and Climate Plan and its underlying assumptions. The ERT encourages the Party to report the main differences (or their absence) in assumptions, methods employed and results between the projections reported in the current NC and those reported in the previous submission.

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

Table I.3

### Findings on financial, technological and capacity-building support from the review of the eighth national communication of Greece

<i>No.</i>	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
1	Reporting requirement specified in paragraph 52 Issue type: transparency Assessment: recommendation	The ERT noted that Greece reported its contribution to the Ramsar Convention as a bilateral contribution instead of a multilateral contribution, even though it is established as a multilateral environmental agreement. During the review, Greece noted that it will report future contributions to the Ramsar Convention as multilateral contributions. The ERT recommends that Greece report financial contributions to the Ramsar Convention as multilateral contributions.
2	Reporting requirement specified in paragraph 55 Issue type: completeness Assessment: encouragement	Greece did not report explicitly on private flows leveraged by bilateral climate finance for mitigation and adaptation activities in non-Annex I Parties. Greece reported in its NC8 that it currently does not have a system to track private financial flows, as Greece's emphasis is on tracking public financial flows associated with climate change. During the review, Greece confirmed that it does not have a system to track private finance flows and noted that it will strive to address the reporting requirements related to private climate finance in its next submission. The ERT encourages Greece to report, to the extent possible, on private financial flows leveraged by bilateral climate finance for mitigation and adaptation activities in non-Annex I Parties in its next NC, in order to increase the completeness of its reporting.
3	Reporting requirement specified in paragraph 55 Issue type: completeness	Greece did not report explicitly on any PaMs that promote the scaling up of private investment in mitigation and adaptation activities in developing country Parties. During the review, Greece confirmed that information on PaMs that promote the scaling up of private investment in mitigation and adaptation activities in developing country Parties was not explicitly reported.

No.	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
	Assessment: encouragement	The ERT reiterates the encouragement from the previous review report for the Party to report in its next NC, to the extent possible, on PaMs that promote the scaling up of private investment in mitigation and adaptation activities in developing countries.
4	Reporting requirement specified in paragraph 57 Issue type: completeness Assessment: recommendation	<p>Greece provided information on measures taken to promote, facilitate and finance the transfer of, access to and deployment of climate-friendly technologies for the benefit of non-Annex I Parties. However, the ERT noted that Greece did not provide explicit information on measures taken for the support of the development and enhancement of the endogenous capacities and technologies of non-Annex I Parties. The ERT also noted that Greece reported activities related to technology transfer; however, it did not refer explicitly to success and failure stories.</p> <p>During the review, Greece noted that the Energy Policy and Development Centre of the National and Kapodistrian University of Athens undertakes initiatives that aim to develop and enhance the endogenous capacities and technologies of non-Annex I Parties in the relevant member States of the Organization of the Black Sea Economic Cooperation and worldwide. Regarding success and failure stories, Greece confirmed during the review that information about the success or failure of collaborative activities was not explicitly reported.</p> <p>The ERT recommends that Greece improve the completeness of its reporting by including in its next NC information on the support provided for the development and enhancement of the endogenous capacities and technologies of non-Annex I Parties. The ERT also reiterates the recommendation of the previous ERT that Greece report, where feasible, whether the activities related to technology transfer are considered success or failure stories.</p>
5	Reporting requirement specified in paragraph 58 Issue type: completeness Assessment: encouragement	<p>The ERT noted that Greece did not provide information on how it has encouraged private sector activities and how these activities help Parties to meet their commitments under Article 4, paragraphs 3–5, of the Convention.</p> <p>During the review, Greece confirmed that information on private sector activities and how these activities help Parties to meet their commitments under Article 4, paragraphs 3–5, of the Convention was not explicitly reported.</p> <p>The ERT reiterates the encouragement from the previous review report for Greece to indicate in its next NC, where feasible, in what way it encouraged private sector activities, and how these activities help meet the commitments of Parties under Article 4, paragraphs 3–5, of the Convention.</p>

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

Table I.4

**Findings on minimization of adverse impacts and supplementary information related to the Kyoto Protocol reported in the eighth national communication of Greece**

No.	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation</i>
1	Reporting requirement specified in paragraph 35 Issue type: transparency Assessment: recommendation	<p>The Party explained in its NC8 the steps taken at the EU level to implement decisions of ICAO and IMO to reduce GHG emissions, but did not provide the concrete steps undertaken at the national level, for example by providing references to national studies that Greece undertook to support deliberations with other member States at the EU level, meetings in which Greece participated, proposals that Greece developed, how Greece helped to shape some of the EU decisions as a member State or how EU steps related to ICAO and IMO decisions are endorsed and implemented at the national level.</p> <p>During the review, Greece explained that, as a member State of the EU, it supports the strong preference of the EU for a global approach led by IMO and ICAO to reducing GHG emissions from international shipping. Greece provided its national action plans for the reduction of emissions in the context of IMO and ICAO decisions.</p> <p>The ERT reiterates the recommendation from the previous review report for Greece to specify in its next NC the steps it has taken to promote and/or implement any decisions of ICAO and IMO in order to limit or reduce emissions of GHGs not controlled by the</p>

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<i>No.</i>	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation</i>
		Montreal Protocol from aviation and marine bunker fuels at the national level. The ERT notes that such information could build on the information provided to the ERT during the review. The ERT concludes that this potential problem of a mandatory nature does not influence the Party's ability to fulfil its commitments for the second commitment period of the Kyoto Protocol.

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

## Annex II

### Assessment of adherence to the reporting guidelines for the fifth biennial report of Greece

The BR5 of Greece is the final BR under the measurement, reporting and verification system established under the Convention.<sup>1</sup> Nevertheless, ERTs continue to provide recommendations and encouragements to Parties on completeness, transparency and adherence to the UNFCCC reporting guidelines on BRs. Parties may find these recommendations and encouragements relevant, as appropriate, when preparing their initial biennial transparency report under the enhanced transparency framework of the Paris Agreement. Tables II.1–II.2 summarize the ERT assessment of adherence to the UNFCCC reporting guidelines on BRs for Greece’s BR5.

Table II.1  
Findings on projections reported in the fifth biennial report of Greece

No.	Reporting requirement and issue type	Description of the finding with recommendation or encouragement
1	Reporting requirement specified in paragraph 25 Issue type: completeness Assessment: encouragement	Greece reported the GHG emission projections for the WEM and WAM scenarios in its NC8 and BR5 but did not include a WOM scenario.  During the review, the Party explained that the WOM scenario is not reported since it is not a mandatory requirement and suggested that the emissions for the WOM scenario can be quantified by deducting the aggregate effect of PaMs as shown in table 5.9 of the NC8 from the WEM emission projections.  The ERT reiterates the encouragement from the previous review report for the Party to include a WOM scenario in its next submission.
2	Reporting requirement specified in paragraph 26 Issue type: transparency Assessment: recommendation	Greece reported WEM and WAM projections disaggregated by sector and by gas in tables 5.1–5.4 of the NC8 and BR5 as well as in CTF tables 6(a) and 6(c). The ERT noted that the values presented in tables 5.1–5.4 of the NC8 and BR5 differ from those in CTF tables 6(a) and 6(c).  During the review, Greece explained that there was an error in transferring data during the compilation of tables 5.1–5.4 of the NC8, and that the figures in CTF tables 6(a) and 6(c) should be treated as the most recent.  The ERT recommends that Greece improve the transparency of its reporting by providing consistent and updated information on projections in the relevant tables of its submission.
3	Reporting requirement specified in paragraph 27 Issue type: transparency Assessment: encouragement	The ERT noted that Greece presented its sensitivity analysis performed for the projection scenarios reported in the NC7. However, a sensitivity analysis for the updated projections reported in the NC8 was not conducted.  During the review, Greece confirmed that the sensitivity scenarios presented in table 5.32 of the NC8 and BR5 include the 2017 WEM scenario from the NC7.  The ERT encourages Greece to report an updated sensitivity analysis of the WEM scenario in its next submission.
4	Reporting requirement specified in paragraph 30 Issue type: transparency	Greece reported in its NC8 and BR5 projections relative to unadjusted inventory data from 2019. However, the ERT noted that in tables 5.1–5.4 of the NC8 and BR5 the Party presented the latest historical year as 2017.  During the review, the Party explained that the base year for projections is 2019, as explained in sections 5.4.1 and 5.4.2 of the NC8 and BR5. The Party also explained that

<sup>1</sup> The Conference of the Parties, by decision 1/CP.24, decided that the final BRs shall be those submitted to the secretariat no later than 31 December 2022 and reaffirmed that, for Parties to the Paris Agreement, following the submission of the final BR, the modalities, procedures and guidelines contained in the annex to decision 18/CMA.1 will supersede the measurement, reporting and verification system established under decision 1/CP.16, paras. 40–47 and 60–64, and decision 2/CP.17, paras. 12–62.



No.	Reporting requirement and issue type	Description of the finding with recommendation or encouragement
	Assessment: encouragement	<p>owing to an error, tables 5.1–5.4 of the NC8 and BR5 contained inventory data up to 2017 instead of 2019.</p> <p>The ERT encourages Greece to present its projections relative to the most recent annual inventory submission available.</p>
5	Reporting requirement specified in paragraph 34 Issue type: completeness Assessment: encouragement	<p>Greece reported in tables 5.1–5.4 of its NC8 and BR5 projections for the WEM and WAM scenarios extending to 2020 and 2030. The ERT noted that 2020 and 2030 are less than 15 years from the most recent inventory year.</p> <p>During the review, the Party explained that the 2019 National Energy and Climate Plan is undergoing revisions to align it with the more ambitious targets set forth in the National Climate Law, which is expected to result in a significant increase in the effect of PaMs. Given that these revisions will be published in 2023, projections for 2035 have not yet been estimated.</p> <p>The ERT encourages Greece to include projection estimates extending at least 15 years from the most recent inventory year in its next submission.</p>
6	Reporting requirement specified in paragraph 40 Issue type: transparency Assessment: encouragement	<p>Greece reported the methodology used for the GHG emission projections in the energy and non-energy sectors in sections 5.4.1 and 5.4.2 of the NC8 and BR5. The ERT noted that for the energy sector, the Party reported information fully describing the characteristics, original purpose and strengths of the model used in this sector. The projections are presented in CO<sub>2</sub> eq. However, it was not clear to the ERT whether all the relevant GHGs were estimated using these methods, what the weaknesses of each of the two approaches (for the energy sector and non-energy sectors) are and how the Party accounts for any overlap or synergies that may exist between different PaMs.</p> <p>During the review, the Party clarified that in the non-energy sectors it used spreadsheet models to project GHG emissions, based on assumptions consistent with the latest GHG inventory. A detailed description of the assumptions on growth rates and other parameters is reported in subsections of section 5.4.2 of the NC8 and BR5.</p> <p>The ERT encourages Greece to include information on whether all the GHGs were estimated using the energy and non-energy approaches for GHG projections, the weaknesses of each of the two approaches and how it accounts for any overlap or synergies that may exist between different PaMs in its next submission.</p>
7	Reporting requirement specified in paragraph 41 Issue type: completeness Assessment: encouragement	<p>Greece reported information on the methodology used to estimate emission projections for the energy and non-energy sectors in sections 5.4.1 and 5.4.2 of the NC8 and BR5. However, the ERT noted that no further references to more detailed information were provided.</p> <p>During the review, the Party provided further references and links to models and methodologies used for estimating emission projections.</p> <p>The ERT encourages Greece to provide further references to more detailed information related to each model or approach used for GHG emission projections in its next submission.</p>
8	Reporting requirement specified in paragraph 42 Issue type: completeness Assessment: encouragement	<p>Greece did not report in its NC8 and BR5 the main differences in assumptions, methods employed and results between the projections reported in the NC8 and those reported in previous NCs.</p> <p>During the review, the Party clarified that the same macroeconomic assumptions were used in both the BR4 and the NC8 and BR5, as both sets of projections were based on the 2019 National Energy and Climate Plan and its underlying assumptions.</p> <p>The ERT encourages the Party to report the main differences (or their absence) in assumptions, methods employed and results between the projections reported in the current NC and those reported in the previous submission.</p>

*Note:* 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 and transparent, and thus adheres to the UNFCCC reporting guidelines on NCs and on BRs.

Table II.2

**Findings on provision of financial, technological and capacity-building support to developing country Parties from the review of the fifth biennial report of Greece**

No.	<i>Reporting requirement and issue type</i>	<i>Description of the finding with recommendation or encouragement</i>
1	Reporting requirement specified in paragraph 17 Issue type: transparency Assessment: recommendation	The ERT noted that Greece reported its contribution to the Ramsar Convention as a bilateral contribution instead of a multilateral contribution, even though it is established as a multilateral environmental agreement. During the review, Greece noted that it will report future contributions to the Ramsar Convention as multilateral contributions. The ERT recommends that Greece report financial contributions to the Ramsar Convention as multilateral contributions.
2	Reporting requirement specified in paragraph 19 Issue type: completeness Assessment: encouragement	Greece did not report explicitly on any PaMs that promote the scaling up of private investment in mitigation and adaptation activities in developing country Parties. During the review, Greece confirmed that information on PaMs that promote the scaling up of private investment in mitigation and adaptation activities in developing country Parties was not explicitly reported. The ERT reiterates the encouragement from the previous review report for Greece to report, to the extent possible, on PaMs that promote the scaling up of private investment in mitigation and adaptation activities in developing countries.
3	Reporting requirement specified in paragraph 21 Issue type: completeness Assessment: recommendation	Greece provided information on measures taken to promote, facilitate and finance the transfer of, access to and deployment of climate-friendly technologies for the benefit of non-Annex I Parties. However, the ERT noted that Greece did not provide explicit information on measures taken for the support of the development and enhancement of the endogenous capacities and technologies of non-Annex I Parties. During the review, Greece noted that the Energy Policy and Development Centre of the National and Kapodistrian University of Athens undertakes initiatives that aim to develop and enhance the endogenous capacities and technologies of non-Annex I Parties in the relevant member States of the Organization of the Black Sea Economic Cooperation and worldwide. The ERT recommends that Greece improve the completeness of its reporting by including in its next NC information on the support provided for the development and enhancement of the endogenous capacities and technologies of non-Annex I Parties.
4	Reporting requirement specified in paragraph 21 Issue type: completeness Assessment: encouragement	The ERT noted that Greece reported activities related to technology transfer: however, it did not refer explicitly to success and failure stories. During the review, Greece confirmed that information about the success or failure of collaborative activities was not explicitly reported. The ERT encourages Greece to report, where feasible, whether the activities related to technology transfer are considered success or failure stories.

*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 and transparent, and thus adheres to the UNFCCC reporting guidelines on BRs.

## Annex III

### Documents and information used during the review

#### A. Reference documents

2022 GHG inventory submission of Greece. Available at <https://unfccc.int/ghg-inventories-annex-i-parties/2022>.

2023 GHG inventory submission of Greece. 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-2023>.

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

BR5 CTF tables of Greece. Available at <https://unfccc.int/BR5>.

BR5 of Greece. Available at <https://unfccc.int/BR5>.

BR5 of the EU. Available at <https://unfccc.int/BR5>.

“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. European Commission document COM(2019) 640 final. 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 II: UNFCCC reporting guidelines on national communications”. FCCC/CP/2019/13/Add.1. Available at <https://unfccc.int/documents/210471>.

“Guidelines for the preparation of the information required under Article 7 of the Kyoto Protocol”. Annex to decision 15/CMP.1. Available at <https://unfccc.int/documents/4253>.

“Guidelines for the preparation of the information required under Article 7 of the Kyoto Protocol”. Annex III to decision 3/CMP.11. Available at <https://unfccc.int/documents/9101>.

“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>.

National energy and climate plans of Greece. Available at [https://energy.ec.europa.eu/system/files/2020-03/el\\_final\\_necp\\_main\\_en\\_0.pdf](https://energy.ec.europa.eu/system/files/2020-03/el_final_necp_main_en_0.pdf).

NC8 of Greece. Available at <https://unfccc.int/NC8>.

NC8 of the EU. Available at <https://unfccc.int/NC8>.

Report on the individual review of the annual submission of Greece submitted in 2022. FCCC/ARR/2022/GRC. Available at <https://unfccc.int/process-and-meetings/transparency-and-reporting/reporting-and-review-under-the-convention/greenhouse-gas-inventories-annex-i-parties/inventory-review-reports-2022>.

Report on the technical review of the BR4 of Greece. FCCC/TRR.4/GRC. Available at <https://unfccc.int/review-reports-ncs-brs>.

“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 Dimitris Niavis (MEEN), including additional material. The following references were provided by Greece and may not conform to UNFCCC editorial style as some have been reproduced as received:

Organisation for Economic Co-operation and Development. 2012. *OECD DAC Rio Markers for Climate: Handbook*. Available at [https://www.oecd.org/dac/environment-development/Revised%20climate%20marker%20handbook\\_FINAL.pdf](https://www.oecd.org/dac/environment-development/Revised%20climate%20marker%20handbook_FINAL.pdf).

Sebos, I., Progiou, A.G., Leonidas, K. 2021. Methodological Framework for the Quantification of GHG Emission Reductions from Climate Change Mitigation Actions. Available at: <https://journals.riverpublishers.com/index.php/SPEE/article/view/19459/15511>.

Stamopoulos, D., Dimas, P., Sebos, I., Tsakanikas, A. 2021. Does Investing in Renewable Energy Sources Contribute to Growth? A Preliminary Study on Greece's National Energy and Climate Plan. *Energies* 2021, 14, 8537. Available at <https://doi.org/10.3390/en14248537>.

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