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Report of the technical review of the sixth national communication of Turkey

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

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

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I. Introduction and summary

A. Introduction

1. For Turkey, the Convention entered into force on 24 May 2004 and the Kyoto Protocol on 26 August 2009. Based on decision 26/CP.7, which recognizes the special circumstances of Turkey, placing it in a situation different from that of other Parties included in Annex I to the Convention (Annex I Parties), Turkey has not submitted an official greenhouse gas (GHG) emission reduction target under the Convention and its Kyoto Protocol.
2. This report covers the centralized technical review of the sixth national communication (NC6) of Turkey, coordinated by the secretariat, in accordance with the “Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention” (decision 23/CP.19) and the “Guidelines for review under Article 8 of the Kyoto Protocol” (decision 22/CMP.1).
3. The review took place from 6 to 11 June 2016 in Bonn, Germany, and was conducted by the following team of nominated experts from the UNFCCC roster of experts: Ms. Marta Alfaro (Chile), Mr. Daniel Bouille (Argentina), Mr. Amit Garg (India), Mr. Leonidas Osvaldo Girardin (Argentina), Ms. Kema Kasturiarachchi (Sri Lanka), Ms. Thelma Krug (Brazil), Mr. Asger Strange Olesen (Denmark), Mr. Nasimjon Rajabov (Tajikistan), Mr. Erik Rasmussen (Denmark), Ms. Sirinthornthep Towprayoon (Thailand), Mr. Goran Vukmir (Bosnia and Herzegovina) and Ms. Christina Davies Waldron (United States of America). Mr. Garg and Mr. Rasmussen were the lead reviewers. The review was coordinated by Ms. Xuehong Wang and Mr. Nalin Srivastava (UNFCCC secretariat).
4. During the review, the expert review team (ERT) reviewed each section of the NC6. The ERT also reviewed the supplementary information provided by Turkey as a part of the NC6 in accordance with Article 7, paragraph 2, of the Kyoto Protocol.
5. In accordance with decisions 23/CP.19 and 22/CMP.1, a draft version of this report was communicated to the Government of Turkey, which provided comments that were considered and incorporated, as appropriate, into this final version of the report.

B. Summary

6. The ERT conducted a technical review of the information reported in the NC6 of Turkey in accordance with the “Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications” (hereinafter referred to as the UNFCCC reporting guidelines on NCs). As required by decision 15/CMP.1, supplementary information required under Article 7, paragraph 2, of the Kyoto Protocol¹ applicable in the case of Turkey is partially provided in the NC6 (see paras. 112 and 113 below).
7. Turkey considered a few of the recommendations provided in the report of the in-depth review of the fifth national communication of Turkey.² The ERT commended Turkey for its improved reporting. During the review, Turkey provided further relevant

¹ Decision 15/CMP.1, annex, chapter II.

² FCCC/IDR.5/TUR.

information, particularly in relation to the GHG emission projection scenarios reported in the NC6.

1. Completeness and transparency of reporting

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

2. Timeliness

9. The NC6 was submitted on 5 April 2016, after the deadline of 1 January 2014 mandated by decision 9/CP.16. According to paragraph 79 of the annex to decision 23/CP.19 and paragraph 139 of the annex to decision 22/CMP.1, Parties shall inform the secretariat about any difficulties with the timeliness of the submission of their national communication (NC). Turkey did not inform the secretariat about its difficulties with the timely submission of its NC6. As the NC6 was not submitted within six weeks after the due date (15 February 2014), the delay was brought to the attention of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP) and the Compliance Committee and made public.

10. During the review, Turkey explained that the NC6 was prepared under the Preparation of National Communications on Climate Change project. This project is supported by the Investment Programme 2013, executed by the Ministry of the Environment and Urbanization of Turkey, and conducted by the Scientific and Technological Research Council of Turkey's Marmara Research Centre. Studies under this project commenced in 2014 only, and the draft and final versions of NCs are prepared within the work plan. However, the preparation of the NC6 was delayed due to the late completion of the GHG emission projections elaborated as part of Turkey's preparation of its intended nationally determined contribution. The ERT noted with great concern the delay in the submission of the NC6.

3. Adherence to the reporting guidelines

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

Table 1

Assessment of completeness and transparency issues of reported information in the sixth national communication of Turkey^a

<i>Sections of national communication</i>	<i>Completeness</i>	<i>Transparency</i>	<i>Reference to paragraphs</i>	<i>Supplementary information under the Kyoto Protocol</i>	<i>Completeness</i>	<i>Transparency</i>	<i>Reference to paragraphs</i>
Executive summary	Complete	Transparent		National systems ^b	NA	NA	
National circumstances	Complete	Mostly transparent	15	National registries ^b	NA	NA	
Greenhouse gas inventory	Complete	Transparent		Supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17 ^b	NA	NA	
Policies and measures (PaMs)	Mostly complete	Partially transparent	24, 26–29	PaMs in accordance with Article 2	Partially complete	Partially transparent	64, 65
Projections and total effect of PaMs	Complete	Partially transparent	69, 70, 73, 92	Domestic and regional programmes and/or arrangements and procedures	Partially complete	Transparent	22
Vulnerability assessment, climate change impacts and adaptation measure	Complete	Transparent		Information under Article 10 ^b	Partially complete	Partially transparent	113
Financial resources and transfer of technology ^c	NA	NA		Financial resources ^c	NA	NA	
Research and systematic observation	Complete	Transparent		Minimization of adverse impacts in accordance with Article 3, paragraph 14 ^b	NA	NA	
Education, training and public awareness	Complete	Transparent					

Abbreviation: NA = not applicable.

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

^b Turkey, as a Party included in Annex I with no commitments inscribed in Annex B to the Kyoto Protocol, has no obligation to report on: the minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol; supplementary information on its national system under Article 5, paragraph 1, of the Kyoto Protocol; a national registry; and supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol.

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

^d Reporting on financial resources under the Kyoto Protocol is relevant for developed country Parties and Annex II Parties. As Turkey is not an Annex II Party, it does not have an obligation to provide information on financial resources under Article 11 of the Kyoto Protocol, including on “new and additional” resources.

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

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

1. Information on relevant national circumstances

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

13. However, the ERT found that, except for noting how trends in population and key changes in transportation are likely to have affected GHG emissions over time, the NC6 does not provide a complete and clear description of how the national circumstances and changes in the national circumstances affect GHG emissions and removals over time. For example, although it provides information on general aspects of the national circumstances, such as previous economic growth, the NC6 does not specify how this has affected GHG emissions over time.

14. During the review, Turkey provided additional information on factors influencing GHG emissions and removals in Turkey, such as climate change in the Mediterranean Basin, gross domestic product (GDP) and population growth, as well as other drivers of emission trends described in chapter 3 of the NC6. Turkey also informed the ERT that only limited research has been conducted on the effects of the national circumstances, such as population and the geographic and climate profiles, of the GHG emission trends, and that interaction among the emission drivers needs to be assessed using an integrated scientific approach.

15. The ERT reiterates the recommendation made in the previous review report that Turkey enhance the transparency of its reporting by including in its next NC a description of how each aspect of the national circumstances and their changes affect GHG emissions and removals over time.

16. The ERT noted that during the period 1990–2014, Turkey's population and GDP increased by 40.6 and 148.7 per cent, respectively, while GHG emissions per GDP decreased by 9.5 per cent and GHG emissions per capita increased by 60.0 per cent. Primary energy consumption increased by 128.4 per cent from 1990 to 2013, which in 2013 consisted of 88 per cent of fossil fuels (i.e. an increase in the share of fossil fuels from 81 per cent in 1990), despite the increase in the share of renewable energy. Table 2 illustrates the national circumstances of Turkey by providing some indicators relevant to GHG emissions and removals.

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

	1990	2000	2010	2013	2014	Change 1990–2014 (%)	Change 2013–2014 (%)
Population (million)	53.99	63.24	72.31	75.01	75.93	40.6	1.2
GDP (2011 USD billion using PPP)	576.13	822.85	1 202.82	1 392.20	1 432.77	148.7	2.9
TPES (Mtoe)	52.72	75.96	105.27	116.49	–	–	–
GHG emissions without LULUCF (kt CO ₂ eq)	207 773.32	296 810.84	395 282.51	438 819.58	467 550.38	125.0	6.5
GHG emissions with LULUCF (kt CO ₂ eq)	177 544.12	260 596.01	348 089.05	380 398.45	407 670.12	129.6	7.2
GDP per capita (2011 USD thousand using PPP)	10.67	13.01	16.63	18.56	18.87	76.8	1.7
TPES per capita (toe)	0.98	1.20	1.46	1.55	–	–	–
GHG emissions per capita (t CO ₂ eq)	3.85	4.69	5.47	5.85	6.16	60.0	5.3
GHG emissions per GDP unit (kg CO ₂ eq per 2011 USD using PPP)	0.36	0.36	0.33	0.32	0.33	–9.5	3.5

Sources: (1) GHG emissions data: Turkey's 2016 GHG inventory submission, version 2; (2) Population, GDP and TPES data: International Energy Agency.

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

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

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

17. Turkey has provided a summary of information on GHG emission trends for the period 1990–2013. This information is fully consistent with the 2015 national GHG inventory submission. Summary tables, including trend tables for emissions in carbon dioxide equivalent (CO₂ eq) (given in the common reporting format tables), are provided in an annex to the NC6. During the review, the ERT took note of the 2016 annual submission. The relevant information therein is reflected in this report.

18. Total GHG emissions³ excluding emissions and removals from land use, land-use change and forestry (LULUCF) increased by 125.0 per cent between 1990 and 2014, whereas total GHG emissions including net emissions and removals from LULUCF increased by 129.6 per cent over the same period. In 2014, of the total GHG emissions, carbon dioxide (CO₂) was responsible for 81.7 per cent and had increased by 160.5 per cent since 1990; methane (CH₄) was responsible for 12.2 per cent and had increased by 30.4 per cent; and nitrous oxide (N₂O) was responsible for 5.0 per cent and had increased by 41.0 per cent. Fluorinated gases (F-gases) were responsible for 1.1 per cent and had increased by 384.4 per cent since 2000 (all three F-gases were reported for the period 2000–2014 only).

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

An analysis of the drivers of GHG emission trends in each sector is provided in chapter II.B below. Table 3 provides an overview of GHG emissions by sector from 1990 to 2014.

Table 3
Greenhouse gas emissions by sector in Turkey, 1990–2014

Sector	GHG emissions (kt CO ₂ eq)					Change (%)		Share by sector (%)	
	1990	2000	2010	2013	2014	1990–2014	2013–2014	1990	2014
	1. Energy	132 477.27	214 364.82	286 049.30	310 037.19	339 104.68	156.0	9.4	63.8
A1. Energy industries	33 937.30	68 191.61	102 608.67	113 903.62	132 248.49	289.7	16.1	16.3	28.3
A2. Manufacturing industries and construction	35 140.58	67 441.61	62 867.11	61 821.38	70 085.28	99.4	13.4	16.9	15.0
A3. Transport	27 003.68	36 507.96	45 468.26	68 997.11	73 700.01	172.9	6.8	13.0	15.8
A4.–A5. Other	33 072.02	37 516.44	68 411.05	58 326.17	54 351.43	64.3	–6.8	15.9	11.6
B. Fugitive emissions from fuels	3 323.56	4 707.08	6 694.07	6 988.78	8 719.35	162.3	24.8	1.6	1.9
C. CO ₂ transport and storage	0.13	0.13	0.13	0.13	0.13	0.0	0.0	0.0	0.0
2. IPPU	23 124.39	28 410.05	51 784.73	63 212.57	62 809.54	171.6	–0.6	11.1	13.4
3. Agriculture	41 226.85	39 649.97	39 328.51	49 320.18	49 521.76	20.1	0.4	19.8	10.6
4. LULUCF	–30 229.20	–36 214.83	–47 193.46	–58 421.14	–59 880.26	98.1	2.5	NA	NA
5. Waste	10 944.82	14 385.99	18 119.97	16 249.65	16 114.39	47.2	–0.8	5.3	3.4
Total GHG emissions without LULUCF	207 773.32	296 810.84	395 282.51	438 819.58	467 550.38	125.0	6.5	100.0	100.0
Total GHG emissions with LULUCF	177 544.12	260 596.01	348 089.05	380 398.45	407 670.12	129.6	7.2	NA	NA

Sources: (1) GHG emission data: Turkey's 2016 annual inventory submission, version 2; (2) GDP per capita data: World Bank.

Abbreviations: GHG = greenhouse gas, IPPU = industrial processes and product use, LULUCF = land use, land-use change and forestry, NA = not applicable, PPP = purchasing power parity.

3. National system

19. Turkey provided in its NC6 some elements of a description of how its national system is performing the general and specific functions defined in the guidelines for national systems under Article 5, paragraph 1, of the Kyoto Protocol (decision 19/CMP.1). However, Turkey, as a Party included in Annex I to the Convention with no commitments inscribed in Annex B to the Kyoto Protocol, has no obligation to report supplementary information on its national system under Article 5, paragraph 1, of the Kyoto Protocol. The ERT commends Turkey for its efforts to include the information on the national system in its NC6, including information on the general structure of the national system, quality assurance and quality control procedures and the estimation of uncertainties, and took note of the information provided.

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

20. Turkey has reported in its NC6 some information on legislative arrangements and procedures related to the Kyoto Protocol. Because Turkey does not have a binding target

for reducing its GHG emissions under the Kyoto Protocol, it has no obligation to report on institutional arrangements and decision-making procedures relating to commitments, including those relating to participation in the Kyoto Protocol mechanisms.

21. The overall responsibility for implementing the Kyoto Protocol lies with the Ministry of the Environment and Urbanization. For reporting under the Kyoto Protocol, the Ministry of the Environment and Urbanization coordinates the national institutions through the Coordination Board on Climate Change and Air Management, which uses seven technical working groups with management support from a group of consultants and a secretariat.

22. The ERT noted that the NC6 does not include a complete description of the provisions to make information on legislative arrangements and administrative procedures established pursuant to the implementation of the Kyoto Protocol publicly accessible. During the review, Turkey referred to its NCs and annual GHG inventories which have been submitted under the Kyoto Protocol since it entered into force for Turkey on 26 August 2009. The ERT noted that these reports are available on the UNFCCC website. The ERT recommends that Turkey improve the completeness of its reporting by explicitly specifying in its next NC its provisions to make information on the legislative arrangements and enforcement and administrative procedures publicly accessible for reporting under the Kyoto Protocol.

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

23. Turkey has provided in its NC6 information on its package of PaMs implemented, adopted and planned in order to fulfil its commitments under the Convention and its Kyoto Protocol.

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

24. In its NC6, Turkey reported on its PaMs adopted, implemented and planned in achieving its commitments under the Convention. Turkey provided information on PaMs organized by sector. A separate section on cross-sectoral PaMs was also included.

25. Turkey did not report PaMs by sector, subdivided by gas, in its NC6. Further, for some PaMs, the NC6 did not specify the gases affected. The ERT recommends that Turkey organize the reporting on PaMs by sector, subdivided by gas, in its next NC.

26. The NC6 does not include the information required on how PaMs are modifying longer-term trends in anthropogenic GHG emissions and removals consistent with the objective of the Convention. The ERT noted that the section on projections in the NC6 implies a trend within the projection period (1990–2020/2030) that could be viewed as part of a longer-term trend modified by PaMs. The ERT reiterates the recommendation made in the previous review report that Turkey enhance the completeness of its reporting by including, in its next NC, information on how PaMs are modifying longer-term trends in anthropogenic GHG emissions and removals consistent with the objective of the Convention.

27. The ERT noted that the NC6 includes a textual description of the PaMs by sector. However, in the absence of information on the PaMs that have or are expected to have the most significant impact on GHG emissions and removals, it is not clear to the ERT how the PaMs reported are related to the Party's commitment under Article 4, paragraph 2(a), of the Convention, which is to adopt national policies and take corresponding measures to

mitigate climate change by limiting anthropogenic emissions of GHGs and protecting and enhancing GHG sinks and reservoirs. The ERT recommends that Turkey enhance the transparency of the reporting in its next NC by including information on PaMs that are only related to limiting GHG emissions and to protecting and enhancing its GHG sinks and reservoirs. In addition, Turkey did not report on how it gives priority to PaMs that have the most significant impact on GHG emissions and removals. The ERT encourages Turkey to further enhance the transparency of its reporting in its next NC by including this information.

28. The ERT noted that the textual descriptions of PaMs by sector have been supplemented by relevant tables for the sectors. However, the lists of PaMs in the textual and tabular parts of Turkey's NC6 are not fully consistent. Some PaMs seem to be included in the tables only, while others seem to be included in the text only. During the review, Turkey provided additional information which, however, did not bring further clarity to the discrepancies identified. The ERT recommends that Turkey enhance the transparency of its reporting by providing a consistent set of PaMs in the textual and tabular parts of its next NC.

29. In its NC6, Turkey provided information on the GHGs affected, the types of PaMs and their implementation status for the set of PaMs included in the tables. This information cannot be found in the textual description of PaMs. The ERT recommends that Turkey enhance the transparency of its reporting by also providing information in the textual part of the NC on the GHG(s) affected, the types of PaMs and the implementation status for each PaM.

30. In the tables on PaMs in the NC6, the terms used for describing the types of PaMs and their status of implementation are different from those used in the UNFCCC reporting guidelines on NCs. During the review, Turkey clarified how the terms used in its NC6 relate to those used in the UNFCCC reporting guidelines on NCs. The ERT encourages Turkey to enhance the transparency of its reporting by using the terms suggested in the UNFCCC reporting guidelines on NCs, to the extent possible, in its next NC.

31. Turkey did not indicate which PaMs are considered particularly innovative and/or effectively replicable by other Parties. The ERT encourages Turkey to enhance the transparency of its reporting by indicating in its next NC any PaMs that are innovative and/or effectively replicable by other Parties.

32. Turkey has not provided transparent information on PaMs which encourage activities that lead to greater levels of anthropogenic GHG emissions and the rationale for such PaMs. In the section of the NC6 on the energy sector, there are descriptions of PaMs which, by their design, might lead to increasing emissions (e.g. the measures taken to increase the electricity supply under the Electricity Market and Supply Security Strategy – including the “Production based on domestic resources programme Action Plan”, one objective of which is to increase the local coal-based electricity power production from 32 billion kWh in 2013 to 57 billion kWh in 2018; or the measures taken to increase productivity in agriculture through support for irrigation machinery and systems), but these are not identified as such in a systematic manner. The ERT encourages Turkey to improve the transparency of its reporting by identifying, in a systematic manner, those PaMs that may lead to higher levels of emissions and by describing the rationale for such PaMs.

33. In its NC6, Turkey did not provide information regarding which of the PaMs described in detail in the fifth national communication (NC5) have been maintained and which are no longer in place. The PaMs that appear from the descriptions provided in the NC5 and the NC6 to be similar often have different names, which makes the reporting less transparent. During the review, Turkey provided additional information which, however, did not bring further clarity to the possible changes in Turkey's portfolio of PaMs since its

NC5. The ERT encourages Turkey to improve the transparency of the reporting in its next NC by clearly indicating which PaMs from the NC6 are no longer in place and explain the rationale.

34. In its NC6, Turkey has provided some information on the way in which progress made with PaMs to mitigate GHG emissions is monitored and evaluated over time. This includes: a regulation on the monitoring of GHG emissions since May 2014; two related communiqués; and a network-based monitoring and evaluation system established to monitor the measures included in the National Climate Change Action Plan. However, further information on how the monitoring and evaluation network works and on how progress made with PaMs to mitigate GHG emissions is assessed is not included in the NC6. The ERT encourages Turkey to improve the transparency of its reporting by including more detailed information in its next NC on the way in which progress made with PaMs to mitigate GHG emissions is monitored and evaluated over time.

35. Turkey has not provided complete and transparent quantitative estimates of the impacts of PaMs in its NC6. Tables 4.6–4.10 of the NC6, which contain information on PaMs by sector, include estimates for 2 out of 41 PaMs and in one case for the years 2010, 2015, 2020 and 2025, and in the other case for 2020 only. However, there was no description of the estimation methods used. The ERT encourages Turkey to improve the completeness of its reporting by including in its next NC quantitative estimates of the impacts of individual PaMs or sets of PaMs, and to enhance the transparency of its reporting by including a brief description of the estimation methods used.

36. In its NC6, Turkey has not provided complete information on the costs of PaMs, their non-mitigation benefits and the interaction of PaMs at the national level. The textual description of some of the PaMs includes information on costs and non-mitigation benefits. Information on the interaction of PaMs is not provided. The ERT encourages Turkey to improve the completeness of its next NC by including information on the costs and non-GHG mitigation benefits for all PaMs, and on the interaction of PaMs at the national level.

2. Policy framework and cross-sectoral measures

37. Turkey's key policy instrument for development planning and related budget allocation since 1960 is the system of five-year Development Plans. These are coordinated by the Ministry of Development and endorsed by the General Assembly. The latest five-year plan is the Tenth Development Plan covering the period 2014–2018. The foundation of Turkey's climate change policies was laid within the Eighth Development Plan (2001–2005). Turkey's key framework climate policy document is the National Climate Change Strategy, adopted in 2010 under the Ninth Development Plan (2007–2013), and covering the period 2010–2020/2023. Turkey's Supreme Planning Council endorsed this strategy and tasked the Coordination Board on Climate Change and Air Management under the coordination of the Ministry of the Environment and Urbanization with its implementation.

38. The National Climate Change Action Plan, adopted in 2011, includes a set of concrete measures and activities across the portfolios of the sectoral ministries for the period 2011–2023. The National Climate Change Action Plan is in line with the Tenth Development Plan (2014–2018). Turkey stated in its NC6 that it has adopted a medium-term programme with the main objective of “maintaining macroeconomic stability, reducing current operations deficit and inflation, and therefore increasing growth via structural reforms and making the growth more inclusive”. Concrete actions to mitigate climate change include: improving energy efficiency; efficient water use in agriculture; using natural resources more effectively; and making economic gains from waste.

39. Turkey, with a fast-developing economy, aims to reduce GHG emissions up to 21 per cent below the ‘business as usual’ (BAU) scenario by 2030. This value represents the

emission reductions in all economic sectors (energy production, industry, agriculture, waste, buildings, transport and forestry) achieved through the implementation of plans and policies. Turkey defines its climate change policy after 2020 as “integrating climate change goals with development policies and increasing the exploitation of clean and renewable energy sources”. In this context, Turkey aims to take concrete steps towards establishing low-carbon cities by planning energy use, transport, housing, landscape planning, waste management and public health within the scope of climate change.

40. In the NC6, Turkey has included a section on cross-cutting PaMs describing the ongoing work during the period 2014–2017 both as part of the World Bank technical support programme, Partnership for Market Readiness, that focuses on market mechanisms and Turkey’s domestic voluntary carbon market, which comprises 308 projects traded as of April 2014 that are expected to realize an annual GHG emission reduction of over 20 Mt CO₂eq.

41. Table 4 provides a summary of the reported information on the PaMs of Turkey.

Table 4
Summary of information on mitigation actions and their impacts reported by Turkey

<i>Sector affected</i>	<i>List of key mitigation actions</i>	<i>Estimate of mitigation impact by 2020 (kt CO₂ eq)</i>	<i>Estimate of mitigation impact by 2025 (kt CO₂ eq)</i>	
Policy framework and cross-sectoral measures	Tenth Development Plan 2014–2018	NE	NE	
	National Climate Change Strategy 2010–2020/2023	NE	NE	
	National Climate Change Action Plan 2011–2023	NE	NE	
	308 projects for Turkish voluntary carbon market as of April 2014	20 605.69	NE	
Energy, including: [Energy supply]	Tenth Development Plan 2014–2018	NE	NE	
	Electricity Energy Market and Supply Security Strategy	NE	NE	
	Renewable energy	Renewable Energy Law, which includes feed-in tariffs for electricity from renewable sources	NE	NE
	Energy efficiency	Energy Efficiency Law	NE	NE
	Projects conducted with bilateral/multilateral agreements (promoting energy efficiency practices in relation to household electrical appliances)	2 400.00	NE	
Transport	Tenth Development Plan 2014–2018	NE	NE	
	Turkey Transport and Communication Strategy (2011–2013)	NE	NE	
IPPU	Project for the Determination of Resource Efficiency in Industry	NE	NE	

<i>Sector affected</i>	<i>List of key mitigation actions</i>	<i>Estimate of mitigation impact by 2020 (kt CO₂ eq)</i>	<i>Estimate of mitigation impact by 2025 (kt CO₂ eq)</i>
Agriculture	Tenth Development Plan 2014–2018	NE	NE
	Strategic Plan of the Ministry of Food, Agriculture and Livestock	NE	NE
LULUCF	National Forest Programme	NE	NE
	Afforestation and Erosion Control Mobilization Action Plan (2008–2012)	4 000	5 000
Waste	Tenth Development Plan 2014–2018	NE	NE
	Waste Management Action Plan 2008–2012	NE	NE

Note: The estimates of mitigation impact are estimates of emissions of carbon dioxide or carbon dioxide equivalent avoided in a given year as a result of the implementation of mitigation actions. For the Turkish voluntary carbon markets no particular year is reported, because the effect is reported as the annual emission reduction resulting from the 308 projects included as of April 2014.

Abbreviations: IPPU = industrial processes and product use, LULUCF = land use, land-use change and forestry, NE = not estimated.

3. Policies and measures in the energy sector

42. GHG emissions from the energy sector amounted to 339,104.68 kt CO₂ eq in 2014, or 72.5 per cent of total GHG emissions. Between 1990 and 2014, GHG emissions from the energy sector increased by 156.0 per cent. The trend in GHG emissions showed notable increases in energy industries (289.7 per cent), transport (172.9 per cent) and manufacturing industries (99.4 per cent). The main drivers of the emission growth in the energy sector were the increase in electricity production, the increase in road transportation and the population growth.

43. The most important policy framework documents for the energy sector include the Development Plan (currently in its tenth iteration) and several sectoral policy documents, including the Electricity Energy Sector Reform and Privatization Strategy, the Electricity Energy Market and Supply Safety Strategy and the Energy Efficiency Strategy for the period 2012–2023. These were endorsed by the Supreme Planning Council for implementation by the Ministry of Energy and Natural Resources. In line with these, the National Climate Change Strategy includes a set of broad objectives and the National Climate Change Action Plan includes a set of quantitative targets for the energy sector.

44. **Energy supply.** Since much of Turkey's energy supply is under direct government control, the Government's related investments have a direct impact on GHG emissions. In line with its policy framework objectives in relation to economic development, Turkey is working to increase the share of electricity from nuclear power to 10 per cent by 2023, with the first nuclear power plant planned to commence operation in 2019 and the second in 2023, to decrease the share of natural gas within the energy mix to 30 per cent by 2023 from 44 per cent in 2013, and to increase local coal-based electricity power production from 32 billion kWh in 2013 to 57 billion kWh in 2018. However, the ERT noted that an increase in the use of coal is likely to increase GHG emissions in absolute terms and also with regards to the BAU emission trend.

45. **Renewable energy sources.** Turkey aims to increase the share of electricity from renewable sources to at least 30 per cent by 2023 compared with 28.7 per cent in 2013. In Turkey, renewable energy supply is supported both directly through government investments and through feed-in tariffs under the Renewable Energy Law, which promotes private-sector investment in electricity production from renewable sources.

46. **Energy efficiency.** The ERT noted that Turkey's economy is relatively more energy-intensive than other Annex I Parties. In order to address its relatively high energy intensity, the most important policy instrument is the Energy Efficiency Law, implemented by the Energy Efficiency Coordination Board under the coordination of the Ministry of Energy and Natural Resources. It covers the industrial, transport, building and electricity sectors and has given rise to several sets of regulations (see paras. 47 and 50 below).

47. **Residential and commercial sectors.** Under the Energy Efficiency Law, the regulation regarding the energy performance in buildings stipulates measures, technical criteria and implementation guidelines to bring a more integrated approach to energy efficiency in buildings. The regulation on the distribution of heating and sanitary hot water costs in central heating and sanitary hot water systems aims to control the distribution of heating costs based on the amount of heat used, and attempts to control indoor heating have become widespread. The regulations on the energy labelling of household electric refrigerators, freezers and their combinations, and on the energy efficiency requirements for ballasts for fluorescent lighting are other examples of regulations related to secondary legislation that improve energy efficiency in residential areas. Furthermore, in a special heat insulation project titled IZODER, loans for residences were granted, covering 2,759 buildings between 2009 and 2014 with estimated savings of 311 million m³ of natural gas (or 2.7 billion kWh) electricity and 746.3 kt CO₂ eq.

48. **Transport sector.** The most important policy framework documents for the transport sector include the Development Plan and Turkey's Transport and Communication Strategy for the period 2011–2023. Targets with respect to total transportation distribution for 2023 related to the National Climate Change Strategy are to increase the share of railway load haulage from 5 per cent in 2009 to above 15 per cent in 2023 and to increase the share of railway passenger transportation from 2 per cent to above 10 per cent during the same period. Turkey aims to decrease the share of road haulage from 81 per cent to below 60 per cent and to decrease the share of road passenger transportation to 72 per cent during the same period.

49. Policy instruments to reduce GHG emissions from transport include several sets of regulations, such as the regulation regarding principles and procedures on increasing energy efficiency in transportation, and economic instruments such as the vehicle taxation system. In the National Intelligent Transportation Systems Strategy Document (2014–2023) and its Supplement Action Plan (2014–2016), actions such as variable message signs in urban and intercity roads, systems to distribute the volume of traffic to alternative routes, and the establishment of separate lanes to be used during rush hour with rules for their use have been identified to reduce fuel consumption and emissions arising from road transport, and will be implemented in at least one route in the metropolitan municipalities of Ankara, Istanbul and Izmir. The Government's investment in transportation infrastructure (e.g. railway infrastructure and the construction and modernization of ports) may also lead to GHG emission reductions in the transport sector.

50. **Industrial sector.** Under the Energy Efficiency Law, there are support programmes and voluntary agreements for industrial enterprises. Within the context of supporting efficiency-increasing projects under the Voluntary Agreements Programme, projects with costs of under 1,000,000 Turkish liras (TRY) receive support amounting to 30 per cent of their cost. Support at an amount up to TRY 200,000 is provided to industry organizations within the context of the Voluntary Agreements Programme.

4. Policies and measures in other sectors

51. Between 1990 and 2014, GHG emissions from the industrial processes (including solvent and other product use), agriculture and waste sectors increased by 70.69 per cent (53,149.64 kt CO₂ eq), mainly owing to the increases in cement production, livestock population and landfilling of waste.

52. *Industrial processes.* Between 1990 and 2014, GHG emissions from the industrial processes and product use sector increased by 171.6 per cent. The key driver for the rise in emissions in the industrial processes sector was the increase in cement production to cover the rise in demand for cement for domestic construction activities.

53. The most important policy framework documents for the industrial processes sector include the Development Plan and the Industrial Strategy Document, prepared in coordination with the former Ministry of Industry and Commerce. In line with these, the National Climate Change Strategy and the National Climate Change Action Plan include a set of broad objectives, but no quantitative targets.

54. The key policy instrument to reduce GHG emissions from industrial processes through the implementation of the Industrial Strategy Document is the National Eco-Efficiency Programme. This programme also targets the cement sector, which is responsible for the bulk of emissions from industrial processes.

55. *Agriculture.* Between 1990 and 2014, GHG emissions from the agriculture sector increased by 20.1 per cent. The key driver for the increase in emissions in agriculture was the increase in the livestock population, as enteric fermentation and manure management cause the greater part of the emissions in this sector.

56. The most important policy framework documents for the agriculture sector include the Development Plan and the Strategic Plan of the Ministry of Food, Agriculture and Livestock, which is mainly concerned with the management of land, for example through the promotion of best agricultural practices. In line with these, the National Climate Change Strategy and the National Climate Change Action Plan include a set of broad objectives, although there are no quantitative targets for the sector.

57. Policy instruments in the agriculture sector include regulations such as the regulation on good agricultural practices. The NC6 also lists several programmes and projects, some of which are included in table 4 above; however, none of these directly address GHG emissions from livestock, which is the principal source of GHG emissions from agriculture.

58. *LULUCF.* The forestry sector was a net sink of 30,229.20 kt CO₂ eq in Turkey in 1990, with removals increasing by 98.1 per cent to be a net sink of 59,880.26 kt CO₂ eq in 2014. The trend was mainly driven by improvements in sustainable forest management, afforestation, reforestation on forest land and the conversion of coppices to productive forests in forest land remaining forest land.

59. The most important policy framework documents for the forestry sector include the Development Plan, the National Forest Programme and the National Strategy on Climate Change and Protected Areas. In line with these, the National Climate Change Strategy includes a set of broad objectives and the National Climate Change Action Plan includes a set of quantitative targets relating to carbon dioxide capture from forests (to increase the amount of carbon dioxide capture in forest land by 15 per cent above the 2007 level by 2020) and to reduce emissions from deforestation (to reduce deforestation and forest degradation by 20 per cent below the 2007 level by 2020).

60. Policy instruments in the forestry sector include action plans such as the Afforestation and Erosion Control Mobilization Action Plan and regulations such as the

regulation regarding organization, implementation, supervision and renewal of forest management plans. Since much of Turkey's forests are under direct government control, changes to management practices are an efficient means to enhance the sink potential.

61. **Waste management.** Between 1990 and 2014, GHG emissions from the waste sector increased by 47.2 per cent, with landfills generating most of the emissions. This increase in the waste sector was mainly driven by population growth and economic growth. In recent years, the increase in emissions slowed down considerably as the regulation in the landfill sector began to take effect.

62. An overarching objective of the waste sector policy is planned compliance with the European Union waste sector directives, and relevant objectives for landfill operation and waste separation, minimization, recycling and reuse. Full compliance is planned for 2023.

63. The most important policy framework documents for the waste sector include the Development Plan, the Waste Management Action Plan and the Wastewater Treatment Action Plan. In line with these, the National Climate Change Strategy includes a set of broad objectives and the National Climate Change Action Plan includes a set of quantitative targets relating to reducing the quantity of biodegradable waste admitted to landfill sites and the introduction of landfill sites managed by municipalities, to be completed by 2023. The objectives further include: reducing the share of biodegradable waste accepted at regular storing facilities to 75, 50 and 35 per cent in 2015, 2018 and 2025, respectively; establishing integrated disposal facilities throughout the country by 2023 to enable these facilities to receive all municipality wastes; and closing all irregular storage facilities by 2023.

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

64. The NC6 includes information on Turkey's performance of duties regarding aviation safety at the International Civil Aviation Organization (ICAO) and EUROCONTROL and highlights the environmental performance of some of the airports in Turkey. The NC6 also includes information on the environmental performance of some of the ports in Turkey in relation to maritime transport. The activities reported do not directly address emissions from international air and maritime transport. The ERT reiterates the recommendation made in the previous review report that Turkey enhance the completeness of its reporting by including in its next NC information on the steps it has taken to promote and implement decisions by ICAO and the International Maritime Organization (IMO) in order to limit or reduce GHGs not controlled by the Montreal Protocol from aviation and maritime bunker fuels.

65. The ERT noted that the NC6 does not include information on how Turkey 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. The ERT recommends that Turkey improve the completeness of its reporting by including this information in its next NC.

C. Projections and the total effect of policies and measures

66. In the projections section of its NC6, Turkey presented two scenarios: a BAU scenario and a mitigation scenario. The ERT notes that no projections were presented in the NC5, and hence it has not been possible for the ERT to compare the version of projections reported in the NC6 with any previously reported versions. During the review, Turkey confirmed that no previous versions of the projections are available for comparison.

1. Projections overview, methodology and key assumptions

67. The GHG emission projections provided by Turkey in the NC6 include two scenarios until 2030 (see para. 66 above). Both scenarios provided in the NC6 are presented relative to actual inventory data for 1990, 1995, 2000, 2005, 2010 and 2012, and for the years 2020 and 2030. The projections are presented on a gas-by-gas basis for all GHGs. Projections are also provided in an aggregated format for each sector as well as for a national total, using global warming potential values from the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC).

68. The projections are presented on a sectoral basis, using the same sectoral categories used in the PaMs section, although the ERT notes that the transport sector projections were integrated into the energy sector projections, and no dedicated projections for the transport sector were available, as required by the UNFCCC reporting guidelines on NCs.

69. During the review, Turkey provided additional information, confirming that transport is included in the projections for the energy sector, and that separate transport sector projections will be included in the next NC. The ERT recommends that Turkey improve the transparency of its reporting by explicitly reporting in its next NC the projections for the transport sector.

70. Also, the ERT notes that the emission projections related to fuel sold to ships and aircraft engaged in international transport were not reported separately, as required by the UNFCCC reporting guidelines on NCs. During the review, Turkey confirmed that international transport was included in the projections total and that it will be reported separately in the next NC. The ERT recommends that Turkey improve the transparency of its reporting by reporting separately, to the extent possible, the emission projections related to fuel sold to ships and aircraft engaged in international transport.

71. Turkey did not provide clear definitions of the scenarios used in its NC6. The BAU scenario excludes all PaMs implemented and in effect since 2012, and the mitigation scenario includes all PaMs implemented since 2012 and a list of 38 planned PaMs. The ERT notes that the BAU scenario compares to a 'without measures' scenario, because it is based on the case whereby all PaMs in effect since 2012 had not been implemented. The ERT further notes that the mitigation scenario resembles a combination of a 'with existing measures' (WEM) scenario and a 'with additional measures' scenario. The ERT finds that there is no separate WEM scenario that contains only PaMs implemented since the starting year (2012), although some of these PaMs are included under the mitigation scenario.

72. During the review, Turkey confirmed the above findings from the ERT. Turkey explained that only the PaMs listed in chapter 4 of the NC6, where the effects were quantifiable, had been included in the mitigation scenario. Turkey informed the ERT during the review that information will be provided in tabular format in the next NC to explain which PaMs are included in the projections.

73. Based on this finding, the ERT is of the view that the information provided on projection scenarios is not fully transparent and is not fully consistent with the scenario definitions provided in the UNFCCC reporting guidelines on NCs. Hence, it is not possible for the ERT to assess the projected effect of existing PaMs separately from the effect of planned PaMs. The ERT recommends that Turkey improve the transparency of its reporting by providing clear definitions of its scenarios in the next NC, including information outlining the PaMs included in the mitigation scenario. The ERT further encourages Turkey to improve the transparency of its reporting by referring to the scenarios in accordance with the terminology used in the UNFCCC reporting guidelines on NCs, as well as by providing different projections for existing and planned PaMs in its next NC.

74. In the NC6, Turkey reported that a TIMES-MACRO model had been used for the projections for the energy and the industrial processes and product use sectors. For the remaining sectors, Turkey reported that different national models and studies had been used. Turkey did not report explicitly in the NC6 on the methodologies used for the preparation of any of the projections. No references for any of the modelling approaches were reported in the NC6. As no projections were reported in the NC5, Turkey did not provide information on changes in the methodology used compared to the NC5.

75. During the review, Turkey provided information on the TIMES-MACRO model used for some sectors. Turkey also provided references and a brief assessment of the strengths and weaknesses of the model used. The Party informed the ERT that for the non-energy sectors a combination of linear regression, expert judgement and local modelling had been used. Turkey further informed the ERT that the search for appropriate non-energy sector models was ongoing and that a modelling approach for these sectors would be applied in its next NC. The Party also informed the ERT that, as stated in the NC6, the IPCC methodologies were used to calculate the projection estimates for all non-energy sectors.

76. In order to improve transparency, the ERT encourages Turkey to provide information on the characteristics of all models used for all sectors and to provide references to more detailed information on the models used for all sectors.

77. Turkey reported in the NC6 that projected population growth, GDP growth and development in electricity demand are the key assumptions behind the scenarios. The information was provided in a tabular format for the years 2012, 2015, 2020, 2025 and 2030. However, Turkey did not elaborate on the reasons for, or provide references to support, the anticipated development in the key assumptions. In the NC6, Turkey also provided brief information on overall emission trends by 2020, yet without any information to explain the sectoral emission trends by 2020 or on factors behind the individual sectoral projections for both reported scenarios.

78. During the review, Turkey clarified that further assumptions behind the modelling approach were perceived as confidential, and cannot be shared with the ERT. Turkey provided projections on the use of various energy sources (coal, wind, etc.) in 2020 and 2030 and explained that the energy intensity of the residential and commercial sectors as well as increases in personal income would be important factors underlying both scenarios. During the review, Turkey also provided tabular information identifying the key variables for each sector.

79. The ERT considers that the lack of information on assumptions further to population and GDP growth makes it difficult to review the projected underlying emission trends for various sectors under both scenarios. As such, the ERT cannot review whether and how factors such as international fuel prices, tax levels or technological development influence the projected trends by 2020. Therefore, the ERT encourages Turkey to enhance the transparency of the reporting on projections by providing, in its next NC, as a minimum, the key assumptions applied.

80. In the NC6, Turkey did not provide a sensitivity analysis of the results relative to the key assumptions. The ERT is of the view that, for the sectors modelled by the TIMES-MACRO model, a sensitivity analysis would be helpful. The ERT encourages Turkey to enhance the completeness of its reporting by providing in the next NC a sensitivity analysis and discussion, quantitatively where possible, for both the projections and the projected assumptions.

2. Results of projections

81. Owing to its special circumstances, Turkey does not have a target under the Kyoto Protocol or an emission reduction target under the Convention by 2020. Therefore, in this section the results of the projections are not compared to a target.

82. Overall, Turkey's reported projections of total GHG emissions for 2020 show an increasing emission trend. Total emissions in 2020 are expected to be at a level that is 226.9 per cent and 206.8 per cent above the 1990 level under the BAU and mitigation scenarios, respectively. Turkey's reported projections of total GHG emissions for 2030 also show an increasing emission trend. Total emissions in 2030 are expected to be at a level that is 456.2 per cent and 357.8 per cent above the 1990 level under the BAU and mitigation scenarios, respectively. Overall, emission projections for both scenarios follow steeper increasing trends than emission trends in the past. The projected emission levels under different scenarios are presented in table 5.

83. The mitigation scenario projections exhibit a positive and constant increase for the period 2012–2030, whereas the BAU projections show a steeper linear increasing trend for the period 2012–2020, but stabilizing to a constant increase thereafter.

84. On a gas-by-gas basis, Turkey reported that CO₂ emissions in 2012 (the starting year for projections) were 368,338.8⁴ kt CO₂ eq. According to the projections, CO₂ emissions will increase to 602,051.1 kt CO₂ eq under the BAU scenario and to 564,093.3 kt CO₂ eq under the mitigation scenario by 2020. Projected non-CO₂ emissions show an increase of 15,160.6 kt CO₂ eq (15.8 per cent) and 9,277.1 kt CO₂ eq (9.7 per cent) between 2012 and 2020 under the BAU and mitigation scenarios, respectively.

85. The NC6 contains the sectoral BAU projections for the energy, industrial processes, agriculture, LULUCF and waste sectors, including the transport sector (which is included in the energy sector). For the BAU scenario, all sectors except for the LULUCF sector show an increasing trend in emissions from 1990 to 2020. For the combined energy and transport sectors, the BAU projections show an increase from 131,565.7 kt CO₂ eq to 538,886.8 kt CO₂ eq, which drives the overall emission trend towards 2020. The industrial processes sector exhibits an increase of 63,672.1 kt CO₂ eq in emissions during the period 1990–2020. For the LULUCF sector, an increase in removals is observed, increasing from a removal of 30,175.6 kt CO₂ eq in 1990 to a removal of 40,193.3 kt CO₂ eq in 2020. The remaining sectors (agriculture and waste) show increases in emissions of less than 15,000.0 kt CO₂ eq over the same period.

86. With regard to the mitigation scenario, the dominant effect is observed for the combined energy and transport sector projections, namely a reduction of 39,551.3 kt CO₂ eq for 2020 and 205,281.1 kt CO₂ eq for 2030 relative to the BAU scenario, followed by the LULUCF and waste sectors. The ERT takes note that by both 2020 and 2030 no effect has been projected for the industrial processes and agriculture sectors under the mitigation scenario when compared with the BAU scenario.

87. For the period between 2020 and 2030, a continuous increase in emissions is observed for all sectors except for the LULUCF sector under the BAU scenario. This

⁴ All values for the sectors and gases for all years are reported with one digit after the decimal point in Turkey's NC6. In Turkey's joint first and second biennial report and in the common tabular format tables all values are reported with two digits after the decimal point. To reflect the reported information consistently, this report reproduces the values with one digit after the decimal point in the report of the technical review of the sixth national communication of Turkey and with two digits after the decimal point in the report of the technical review of the joint first and second biennial report of Turkey (FCCC/RTT.2/TUR).

includes an expected increase in the energy and transport sectors of 404,660.2 kt CO₂ eq, which totals 943,547.0 kt CO₂ eq in 2030. For the industrial processes sector, the increase amounts to 75,003.6 kt CO₂ eq, while for the LULUCF sector, the level of removals is projected to fall to removals of 38,698.1 kt CO₂ eq in 2030, compared with removals of 40,193.3 kt CO₂ eq in 2020. The agriculture and waste sectors show further increases in emissions in 2030 of less than 8,000 kt CO₂ eq.

88. Under the mitigation scenario, the same sectoral trends apply. Emissions in the energy sector will increase by 238,910.4 kt CO₂ eq between 2020 and 2030, and emissions in the waste sector will increase by 7,790 kt CO₂ eq between 2020 and 2030. The LULUCF sector shows a slight reduction in removals, with removals of less than 300 kt CO₂ eq by 2030. The trends for the industrial processes and agriculture sectors between 2020 and 2030 are identical under both scenarios.

Table 5
Summary of greenhouse gas emission projections for Turkey

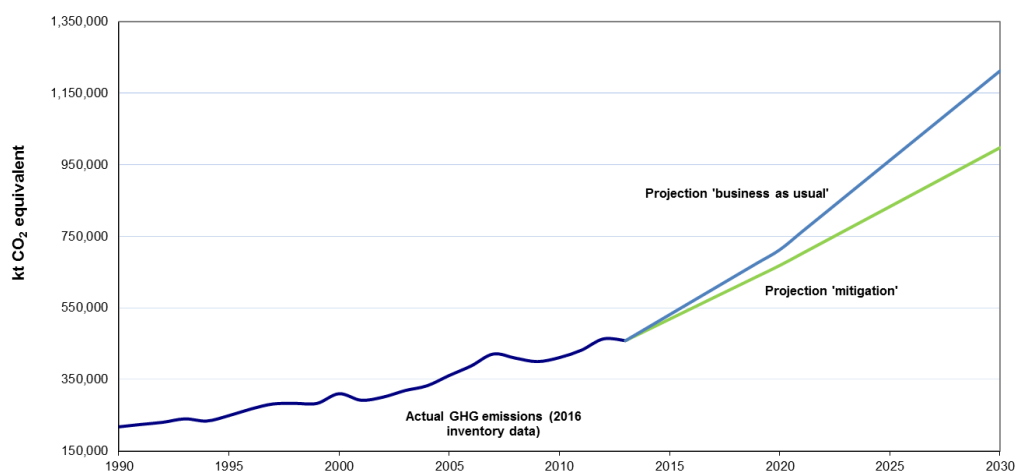
	<i>Greenhouse gas emissions (kt CO₂ eq per year)</i>	<i>Changes in relation to the base year level (%)</i>	<i>Changes in relation to the 1990 level (%)^b</i>
Kyoto Protocol base year	NA	NA	NA
Kyoto Protocol target for the first commitment period (2008–2012)	NA	NA	NA
Kyoto Protocol target for the second commitment period (2013– 2020)	NA	NA	NA
Quantified economy-wide emission reduction target under the Convention	NA	NA	NA
Inventory data 1990 ^a	207773.32	NA	0.0
Inventory data 2014 ^a	467550.38	NA	125.03
‘BAU’ projections for 2020 ^b	713094.1	NA	243.2
‘Mitigation’ projections for 2020 ^b	669252.8	NA	222.1
‘BAU’ projections for 2030 ^b	1 213 478.7	NA	484.0
‘Mitigation’ projections for 2030 ^b	998 697.6	NA	380.7

Abbreviations: BAU = business as usual, NA = not applicable.

^a Turkey’s 2016 greenhouse gas inventory submission; the emissions are without land use, land-use change and forestry.

^b Turkey’s sixth national communication and/or joint first and second biennial report. Even though the inventory data provided above is based on the 2016 inventory submission, it is not directly comparable with the projections, the calculations behind which were based on 2014 national inventory report.

Greenhouse gas emission projections by Turkey



Sources: (1) Data for the years 1990–2014: Turkey’s 2016 greenhouse gas inventory submission version 2 (not directly comparable to the projections, because Turkey’s 2014 GHG inventory submission was used as the basis for the projections); the emissions are without land use, land-use change and forestry; (2) Data for the years 2014–2030: Turkey’s sixth national communication and/or joint first and second biennial report; the emissions are without land use, land-use change and forestry.

Abbreviation: GHG = greenhouse gas.

3. Total effect of policies and measures

89. In the NC6, Turkey presents the estimated difference between the BAU and mitigation scenarios as the total effect of PaMs. Information is presented in terms of GHG emissions avoided or sequestered, by gas (on a CO₂ eq basis), in 1995, 2000, 2012, 2020 and 2030. It also presents relevant information on factors and activities influencing emissions for each sector for the years 1990–2030.

90. The NC6 does not include information required by the UNFCCC reporting guidelines on NCs on the estimated and expected total effect of implemented and adopted PaMs in accordance with the WEM scenario definition, as no information is provided on exactly which PaMs are included under the BAU and mitigation scenarios. Also, the reported information was not provided for the years 2015 and 2025, except for the information provided in graphical format in figure 5.1 of the NC6.

91. During the review, Turkey provided additional information, clarifying that the mitigation scenario contains some of the PaMs presented in chapter 4 of the NC6 and some planned policies. This information increased transparency and completeness, but did not allow for a full assessment of the effect of PaMs, as such. During the review, Turkey informed the ERT about its intention to include values for all relevant years in its next NC.

92. The ERT is of the view that the information provided in the NC6 is not in accordance with the WEM scenario definition, and does not provide a fully transparent picture of the total effect of PaMs. The ERT therefore recommends that, in order to improve transparency, Turkey include in its next NC the total projected effects of implemented PaMs in accordance with the definition of the ‘with measures’ scenario as provided in the UNFCCC reporting guidelines on NCs. Also, the ERT encourages Turkey to enhance the completeness of its next NC by providing projected values in the relevant tables (e.g. similar to tables 5.2–5.5 of the NC6) for the year 2015.

93. Turkey reported that the total estimated difference between the BAU and mitigation scenarios is 43,821.3 kt CO₂ eq in 2020 and 214,781.1 kt CO₂ eq in 2030 (without LULUCF). According to the information reported in the NC6, the PaMs implemented in the combined energy and transport sectors will deliver the largest emission reductions, followed by the effect of PaMs implemented in the LULUCF sector, totalling 29,842.6 kt CO₂ eq in 2020 and 31,012.3 kt CO₂ eq in 2030. The ERT notes that no effect is projected for the industrial processes and agriculture sectors. Table 6 provides an overview of the total effect of PaMs as reported by Turkey (including LULUCF). The cumulative effect from PaMs reported by sector is higher than the effects defined as a difference between the BAU and mitigation scenarios because of the inclusion of the LULUCF sector.

Table 6

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

Sector	Effect of planned, implemented and adopted measures (kt CO ₂ eq)	Relative value (% of 1990 emissions)	Effect of planned, implemented and adopted measures (kt CO ₂ eq)	Relative value (% of 1990 emissions)
	2020		2030	
Energy (including transport)	39 531.3	30.0	205 281.1	156.0
Transport	NA	NA	NA	NA
Industrial processes	0	0	0	0
Agriculture	0	0	0	0
Land-use change and forestry	29 842.6	98.9	31 012.3	102.8
Waste management	4 290.0	30.8	9 500.0	68.2
Total	73 663.9	33.8	245 793.4	112.7

Source: Turkey’s sixth national communication and joint first and second biennial report.

Note: The total effect of implemented and adopted policies and measures is defined as the difference between the ‘business as usual’ and ‘mitigation’ scenarios.

Abbreviation: NA = not available.

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

94. Turkey is not included in Annex II to the Convention and is therefore not obliged to adopt measures and fulfil the obligations referred to in Articles 10 and 11 of the Kyoto Protocol, as defined in Article 4, paragraphs 3, 4 and 5, of the Convention. This is also stated in Turkey’s NC6. The ERT notes the information on Turkey’s status provided in its NC6.

E. Vulnerability assessment, climate change impacts and adaptation measures

95. In its NC6, Turkey has provided the required information on the expected impacts of climate change in the country and on adaptation options. The ERT commends Turkey for the comprehensive information provided on the expected impacts, vulnerability and adaptation measures in the areas of water resources, agriculture and food security, natural disasters, ecosystem services, coastal zones, public health, settlements and tourism. However, the ERT noted that Turkey did not address the encouragement made in the

previous review report on providing information on vulnerability and adaptation measures in the areas of industry and fisheries. The ERT reiterates the encouragement made in the previous review report for Turkey to improve the transparency of its reporting by providing this information in its next NC.

96. During the review, Turkey provided additional information, elaborating on the integrated plans for coastal zone management and for the water resources and agriculture sectors. Turkey has legislation in place to support integrated coastal zone management. Further, the Strategic Plan of the Ministry of Food, Agriculture and Livestock (2010–2014) emphasized the importance of maintaining ecological balance and sustainable use of natural resources and taking efficient precautions against global warming. The Party also provided information on the Strategic Plan of the Ministry of Food, Agriculture and Livestock and Rural Development (2013–2017).

97. Table 7 summarizes the information on vulnerability and adaptation to climate change presented in the NC6.

Table 7
Summary of information on vulnerability and adaptation to climate change

<i>Vulnerable area</i>	<i>Examples/comments/adaptation measures reported</i>
Agriculture and food security	<p><i>Vulnerability:</i> It is estimated that there will be a decline in the yield of products in seven geographical regions in Turkey and across the country owing to the impacts of climate change and changes in production patterns in regional terms. The negative effect of climate change on agricultural yield may also negatively affect the stockbreeding sector</p> <p><i>Adaptation:</i> Comprehensive and advanced technology has been developed in the agriculture sector. The Agricultural Monitoring and Information System Project aims to evaluate the data obtained from satellite images and ground measurement networks in order to produce up-to-date agricultural information that can be instantaneously delivered to stakeholders. The Agricultural City Drought Action Steps are prepared separately for dry and wet agricultural lands</p>
Biodiversity and natural ecosystems	<p><i>Vulnerability:</i> Climate change would cause changes in the structures and functions of ecosystems. Loss of area and volume of water bodies, decreasing fresh water resources and decreases in the current and flow rate would cause arid conditions, water shortage and inadequacy, deterioration of biodiversity and habitats, yield decreases in agriculture and food shortages</p> <p><i>Adaptation:</i> The National Biological Diversity Strategy and Action Plan has been prepared according to Article 6 of the Convention. Six thematic working areas, including agricultural biodiversity, forest biodiversity, steppe biodiversity, mountain biodiversity, inner waters biodiversity, and shore-sea biodiversity, have been identified as areas requiring efforts to combat the effect of climate change. The Protected Areas and Climate Change National Strategy of Turkey has been prepared in order to develop the effective management of protected areas in Turkey</p>
Coastal zones	<p><i>Vulnerability:</i> Land-use change, coastal erosion and flooding, saltwater intrusion, sea level rise, agriculture, tourism and ecosystem interactions, sensitive areas and climate hot spots are among the most significant impacts of climate change on coastal areas, including water potential and water temperatures</p> <p><i>Adaptation:</i> In Turkey, integrated coastal zone plans have been prepared that include guiding strategies and objectives for the provision of integrated policy and decision-making processes</p>
Extreme weather events and disasters	<p><i>Vulnerability:</i> Turkey has experienced a 1 or 2 °C temperature increase and is facing hydrometeorological disasters. Floods, strong winds, hail, landslides, frost, heatwaves, avalanches, fog, heavy snow, drought and forest fires also cause important loss of life and property</p> <p><i>Adaptation:</i> Turkey has developed observation and early warning systems through the Meteorology General Management and the General Directorate of State Hydraulic Works. The South-East Europe Disaster Risk Reducing and Regional Cooperation Project (2008–2013) has been carried out to reduce the damage of hydrometeorological disasters and develop regional cooperation with Turkey</p>
Tourism	<p><i>Vulnerability:</i> Temperature increase, sea level rise and extreme weather events will directly affect mass tourism. Drought and desertification, forest fires, water shortage, loss of biodiversity, coastal erosion, an increase in diseases owing to extreme weather events, and vector-borne contagious diseases will affect tourism</p> <p><i>Adaptation:</i> In order to promote sustainable tourism in Turkey, various actions have been undertaken with the purpose of protecting the environment, improving environmental awareness and encouraging positive contributions of touristic sites to the environment</p>
Human health	<p><i>Vulnerability:</i> The direct or indirect effects of climate change have an effect on human health, such as deaths and injuries related to extreme climate events, increase in diseases transmitted via water and food, increase in respiratory diseases related to the disruption of air quality, increase in allergic diseases related to disruption of air quality</p>

<i>Vulnerable area</i>	<i>Examples/comments/adaptation measures reported</i>
Infrastructure and economy	<p>and increase in vector-borne diseases</p> <p><i>Adaptation:</i> The National Climate Change Action Plan has been developed</p> <p><i>Vulnerability:</i> The level of urbanization is high in Turkey and it is recognized that the urban population is vulnerable to the impacts of climate change. Consumer habits in Turkey and the increasing urban population and growing building stock result in continuing greenhouse gas emissions. Accordingly, urban settlements are prone to the impacts of climate change since they have low adaptive capacity</p> <p><i>Adaptation:</i> Measures include: effectively applying the regulation regarding energy performance of buildings and other energy efficiency legislation in the buildings sector until 2017; decreasing greenhouse gas emissions by 10 per cent in new settlements compared with existing settlements; restricting the increase in emissions from personal vehicle usage in the transport sector; and ensuring sustainable transport in settlements</p>
Water resources	<p><i>Vulnerability:</i> The average temperature will rise by 2–3 °C and precipitation will significantly decrease in Turkey. Accordingly, the increasing demand for water for consumption and the negative impacts of climate change will cause water stress. According to the European Environment Agency, it is expected that Turkey will experience water stress at a rate exceeding 40 per cent in the middle and western regions and 20–40 per cent in the south-east and eastern regions</p> <p><i>Adaptation:</i> The following measures have been implemented: the framework for sustainable development in industrial investment; actions to save water and reuse wastewater; and actions to reduce loss or leaks of city water supplies (e.g. measures to reduce water leakage in the supply, actions to save irrigation). In order to ensure efficient water management, Turkey has prepared basin-based approaches and basin protection action plans, as well as the Drinking, Domestic and Industrial Water Supply Action Plan (2008–2012) covering 81 cities</p>

98. In the NC6, Turkey presented very comprehensive information on research studies and models used to conduct climate projections. Temperature and precipitation projections were reported at both the national and regional levels and a trend analysis for the changes in temperature and precipitation until 2100 was provided. The Party also provided complete and transparent information on impacts due to climate change and vulnerability. Adaptation options for the identified vulnerable sectors and research studies carried out by the Party on vulnerability were also presented. In addition, Turkey presented the socioeconomic impacts resulting from natural disasters such as floods, strong winds, hail, landslides, frost, heatwaves, avalanches, fog, heavy snow, drought and forest fires.

99. Turkey reported in its NC6 on its international cooperation with Parties not included in Annex I to the Convention in preparing for adaptation, which involves the capacity development of least developed countries in Africa in relation to desertification and land degradation control and combating drought.

F. Research and systematic observation

100. Turkey has provided information on its actions relating to research and systematic observation, and addressed both domestic and international activities, including the World Climate Programme, the International Geosphere–Biosphere Programme, the Global Climate Observing System (GCOS) and the IPCC. Further, the NC6 provides information on a number of climate processes and climate system studies conducted at research institutions and universities, including paleoclimate studies, modelling and prediction, including general circulation models, research on the effects of climate change and socioeconomic analysis, including climate change impacts and response options.

101. The NC6 does not include complete information required by the UNFCCC reporting guidelines on NCs on the identification of barriers to free and open international exchange of data and information. There was also a lack of clear information on research and development in relation to climate change adaptation and mitigation technologies. Further, despite the summary information provided on the current status of national plans, programmes and support for ground- and space-based climate observing systems, there was insufficient information on the long-term continuity of data, data quality control and availability, and the mechanism for exchanging and archiving data.

102. During the review, Turkey provided additional information, elaborating on research and development in relation to climate change adaptation and mitigation technologies.

103. The ERT reiterates the encouragement made in the previous review report that Turkey include in its next NC information on barriers to free and open international exchange of data and information, in order to enhance the completeness of its reporting. The ERT also encourages Turkey to provide more information separately for adaptation and mitigation technologies to improve the transparency of its reporting in its next NC. Further, the ERT encourages Turkey to provide information on the long-term continuity of data, data quality control and the mechanism for exchanging and archiving data.

104. The Supreme Council for Science and Technology plays the most important role in making science and technology policies in Turkey. The Council supports the Government in the following areas: determining the long-term science and technology policies and the objectives of those policies; identifying priority areas for science and technology development; preparing relevant plans and programmes; assuming responsibility for public institutions and organizations in the area; maintaining cooperation with special corporations; preparing necessary laws and legislation; and maintaining coordination between sectors and organizations.

105. Different types of climate change related research activities are carried out by research institutions and universities in Turkey (see para. 100 above). A Research Master Plan was developed in 2001 and a new Master Plan is currently being prepared. Research studies in universities are supported through their own scientific research projects. Five projects related to climate change are implemented under the European Union 7th Framework Programme for Research and Technological Development. Socioeconomic analyses, including those of both the impacts of climate change and response options, have been conducted since the early 2000s in Turkey. Further, Turkey reported that research and development expenditure in terms of GDP ratio increased from 0.48 per cent in 2003 to 0.95 per cent in 2013.

106. Atmospheric measurements in Turkey are conducted by the Meteorology General Management (SMS). SMS is a member of the World Meteorological Organization (WMO) and actively participates in all WMO programmes. Some programmes are part of GCOS, the Surface Radiation Network and Global Atmospheric Watch. The Global Observation System (GOS) consists of the union of surface observations, sea observations, high altitude observations and observations conducted with satellites and radars. GCOS consists of a surface network and upper atmosphere network and its observation stations are similar to those of GOS. There are approximately 1,000 observation stations in the surface network and 150 in the upper atmosphere network. Seven Turkish observation stations (Rize, İstanbul, Kastamonu, Sivas, Van, Isparta and Finike) are GCOS stations.

G. Education, training and public awareness

107. In its NC6, Turkey has provided information on its actions relating to education, training and national public awareness for various groups of the community. Compared to

the NC5, Turkey provided more extensive information on education, training and public awareness, particularly on the attention Turkey accords to public awareness on climate change and the many activities undertaken to raise public awareness.

108. In its NC6, Turkey did not include information on the participation of the general public in preparing national communications, as required by the UNFCCC reporting guidelines on NCs. The ERT encourages Turkey to include this information in its next NC.

109. The Ministry of the Environment and Urbanization conducts many awareness-raising, training and capacity-building programmes on climate change in collaboration with other agencies such as the Ministry of National Education, the Ministry of Forestry and Water Affairs Protocol, the Ministry of Renewable Energy, the Ministry of Food, Agriculture and Livestock and the Ministry of Family and Social Policies, as well as through partnerships with the private sector and non-governmental organizations. Turkey uses the mass media inventively to raise awareness of climate change among the general public.

110. Survey results show that about 87.1 per cent of society in Turkey is aware of climate change and 53.9 per cent of people have some knowledge on climate change. One example of public awareness-raising is the project entitled “I am Learning Safe Life with Turkish Red Crescent”, which is a disaster preparedness programme for all schools, teachers, pupils and their families in the country. Turkey also participates in the Programme for International Student Assessment, carried out by the Organisation for Economic Co-operation and Development, which is one of the biggest education research initiatives at the global level, through which the awareness of students on the environment and climate change has been increased. In addition, farmer training programmes have been conducted to increase farmers’ awareness on global warming and more efficient agricultural practice. In order to support developing countries, several training programmes have been conducted for experts from selected countries.

111. In addition, the Coordination Board on Climate Change and Air Management has representatives from both the public and the private sectors, non-governmental organizations and other relevant public sector organizations, and supports Turkey’s climate change policy development processes.

III. Summary of reviewed supplementary information under the Kyoto Protocol

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

112. Supplementary information provided by Turkey under Article 7, paragraph 2, of the Kyoto Protocol is partially complete and partially transparent. The supplementary information is located in different sections of the NC6. Table 8 provides an overview of supplementary information under Article 7, paragraph 2, of the Kyoto Protocol as well as references to the sections or pages of the NC6 in which this information is provided.

113. Turkey has not reported in a complete or transparent manner the following elements of the supplementary information required under Article 7, paragraph 2, of the Kyoto Protocol: the means used for informing the public on its administrative procedures for reporting under the Kyoto Protocol (see para. 22 above); the steps taken to promote and/or implement any decisions by ICAO and IMO (see para. 64 above); information on how the Party strives to implement PaMs under Article 2 of the Kyoto Protocol in such a way as to minimize adverse effects; and explicit reference to Article 10 of the Kyoto Protocol in

reporting the required information, except in the case of Article 10(e) referred to in chapter 9 of the NC6. The technical assessment of the information reported under Article 7, paragraph 2, of the Kyoto Protocol is contained in the relevant sections of this report. The ERT recommends that Turkey include these reporting elements in its next NC.

Table 8

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

<i>Supplementary information</i>	<i>Reference to the sixth national communication</i>
National registry	Not applicable
National system	Section 3.5
Supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17	Not applicable
Policies and measures in accordance with Article 2	Section 4.9
Domestic and regional programmes and/or legislative arrangements and enforcement and administrative procedures	Sections 4.1 and 4.2
Information under Article 10	Sections 8.1.1–8.4 and 9.1
Financial resources	Not applicable

Note: Turkey, as a Party included in Annex I with no commitments inscribed in Annex B to the Kyoto Protocol, has no obligation to report on a national registry, national system or supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol. Reporting on financial resources under the Kyoto Protocol is relevant for developed country Parties and other developed Parties included in Annex II to the Convention (Annex II Parties). As Turkey is not an Annex II Party, it does not have an obligation to provide information on financial resources under Article 11 of the Kyoto Protocol, including on “new and additional” resources.

IV. Conclusions and recommendations

114. The ERT conducted a technical review of the information reported in the NC6 of Turkey according to the UNFCCC reporting guidelines on NCs. The ERT concludes that the NC6 provides a general overview of the national climate policy of Turkey. The information provided in the NC6 includes only a few elements of the supplementary information required under Article 7 of the Kyoto Protocol (see para. 113 above). During the review, Turkey provided additional information on PaMs, GHG projections, integrated plans for coastal zone management, water resources and agriculture, research and systematic observation, public awareness and Turkey’s special situation under the Kyoto Protocol.

115. Turkey’s emissions for 2014 were estimated to be 125.0 per cent above its 1990 level excluding LULUCF and 129.6 per cent above including LULUCF. Emission increases were driven by strong economic and population growth, and continued reliance on fossil fuels for primary energy supply.

116. In the NC6, Turkey presents GHG projections for the period 2012–2030. Two scenarios are included: the BAU (‘without measures’) scenario; and the mitigation (‘with measures’) scenario. For 2020, the projected increases in GHG emissions under the BAU scenario and the mitigation scenario are 226.9 and 206.8 per cent, respectively, above the 1990 level. For 2030, the projected increases in GHG emissions under the BAU scenario and the mitigation scenario are 456.2 and 357.8 per cent, respectively, above the 1990 level.

117. In its NC6, Turkey reported on its implemented, adopted and planned PaMs in achieving its commitments under the Convention. Turkey’s key framework climate policy is the National Climate Change Strategy since 2010, which includes a set of sectoral targets for the period 2010–2020. The National Climate Change Action Plan since 2011

accompanies the strategy and includes a set of activities across the portfolios of the sectoral ministries for the period 2011–2023. The energy sector represented 72.5 per cent of the total GHG emissions of Turkey in 2014 excluding LULUCF. The policies in this sector reported by Turkey include: increasing the share of electricity from nuclear power to 10 per cent by 2023; decreasing the share of natural gas within the energy mix to 30 per cent by 2023; and increasing the share of electricity from renewable sources to 30 per cent by 2023, including by using feed-in tariffs to promote private-sector investment in electricity production from renewable sources. Turkey also reported on its plan to increase local coal-based electricity power production from 32 billion kWh in 2013 to 57 billion kWh in 2018, even though this is likely to lead to an increase in emissions. Turkey also undertakes efforts to reduce GHG emissions in the non-energy sectors, including the industrial processes, agriculture, forestry and waste sectors.

118. Turkey has provided information in its NC6 on impacts, vulnerability and adaptation for the major sectors such as water resources, agriculture and food security, natural disasters, ecosystem services, coastal zones, public health, settlements and tourism. The major expected socioeconomic impacts in Turkey will be caused by a change in precipitation and river water regimes causing flood or drought. This will affect agriculture, urban water distribution systems, production of hydroelectricity and other sectors.

119. Turkey has provided information on its actions relating to research and systematic observation, and addressed both domestic and international activities. Turkey actively participates in international activities related to research and systematic observation. Public budget and other various sources of research financing are available in Turkey, including from the private sector, universities and foreign sources. Domestic activities include paleoclimatology and modelling of future climate change in the region. The research and development expenditure in terms of GDP ratio has increased from 0.48 per cent in 2003 to 0.95 per cent in 2013.

120. Turkey has provided information on its actions relating to education, training and public awareness at both the domestic and the international levels. Compared to the NC5, Turkey provided more extensive information, particularly on activities in relation to public awareness. Representatives from the public and private sectors, non-governmental organizations and other relevant public sector organizations are involved in education, training and public awareness-raising through the Coordination Board on Climate Change and Air Management.

121. In the course of the review, the ERT formulated several recommendations relating to the completeness and transparency of Turkey's reporting under the Convention and its Kyoto Protocol. The key recommendations⁵ are that Turkey:

- (a) Improve the completeness of its reporting by including, in the next NC, the following information:
 - (i) The means used for informing the public on its administrative procedures for reporting under the Kyoto Protocol (see para. 22 above);
 - (ii) Reporting on PaMs by sector, subdivided by gas (see para. 25 above);
 - (iii) How PaMs are modifying longer-term trends in anthropogenic GHG emissions and removals (see para. 26 above);
 - (iv) Steps taken to promote and implement relevant decisions by ICAO and IMO (see para. 64 above);

⁵ The recommendations are given in full in the relevant sections of this report.

- (v) How Turkey 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 (see para. 65 above);
- (vi) Reference to Article 7, paragraph 2, and Article 10 of the Kyoto Protocol, where relevant (see para. 113 above);
- (b) Improve the transparency of its reporting by including, in the next NC, the following information:
 - (i) A description of how each aspect of the national circumstances and their changes affect GHG emissions and removals over time (see para. 15 above);
 - (ii) Information on relevant PaMs in relation to Article 4, paragraph 2, of the Convention only (i.e. relevant in relation to limiting GHG emissions and protecting and enhancing GHG sinks and reservoirs) (see para. 27 above);
 - (iii) A consistent set of PaMs in the textual and tabular parts of its next NC (see para. 28 above);
 - (iv) Information in the textual part of the NC on the GHG(s) affected, the types of PaMs and the implementation status for each PaM (see para. 29 above);
 - (v) GHG projections for the transport sector, clearly separated from the projections for the energy sector (see para. 69 above);
 - (vi) Separate GHG projections for international transport not included in the total national GHG emissions (see para. 70 above);
 - (vii) Clear definitions of GHG emission projection scenarios in accordance with the UNFCCC reporting guidelines on NCs, including information outlining the PaMs included under the mitigation scenario (see para. 73 above);
 - (viii) The total projected effects of implemented PaMs in accordance with the definition of the 'with measures' scenario as provided in the UNFCCC reporting guidelines on NCs (see para. 92 above);
- (c) Improve the timeliness of its reporting by submitting its next NC on time (see para. 9 above).

V. Questions of implementation

122. No question of implementation was raised by the ERT during the review.

Annex

Documents and information used during the review

A. Reference documents

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

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

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

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

“Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention”. Annex to decision 23/CP.19. Available at <<http://unfccc.int/resource/docs/2013/cop19/eng/10a02.pdf#page=20>>.

FCCC/SBI/2011/INF.1. Compilation and synthesis of fifth national communications. Executive summary. Note by the secretariat. Available at <<http://unfccc.int/resource/docs/2011/sbi/eng/inf01.pdf>>.

FCCC/SBI/2011/INF.1/Add.1. Compilation and synthesis of fifth national communications. Note by the secretariat. Addendum. Policies, measures, and past and projected future greenhouse gas emission trends of Parties included in Annex I to the Convention. Available at <<http://unfccc.int/resource/docs/2011/sbi/eng/inf01a01.pdf>>.

FCCC/SBI/2011/INF.1/Add.2. Compilation and synthesis of fifth national communications. Note by the secretariat. Addendum. Financial resources, technology transfer, vulnerability, adaptation and other issues relating to the implementation of the Convention by Parties included in Annex I to the Convention. Available at <<http://unfccc.int/resource/docs/2011/sbi/eng/inf01a02.pdf>>.

FCCC/SBI/2011/INF.2. Compilation and synthesis of supplementary information incorporated in fifth national communications submitted in accordance with Article 7, paragraph 2, of the Kyoto Protocol. Note by the secretariat. Available at <<http://unfccc.int/resource/docs/2011/sbi/eng/inf02.pdf>>.

FCCC/ARR/2014/TUR. Report of the individual review of the inventory submission of Turkey submitted in 2014. Available at <<http://unfccc.int/resource/docs/2015/arr/tur.pdf>>.

FCCC/IDR.5/TUR. Report of the technical review of the fifth national communication of Turkey. Available at <<http://unfccc.int/resource/docs/2015/idr/tur05.pdf>>.

Sixth national communication of Turkey. Available at <http://unfccc.int/files/national_reports/non-annex_i_natcom/application/pdf/6_bildirim_eng_11_reducedfilesize.pdf>.

2015 greenhouse gas inventory submission of Turkey. Available at <http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/8812.php>.

2016 greenhouse gas inventory submission of Turkey. Available at <http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/9492.php>.

B. Additional information provided by the Party

Responses to questions during the review were received from Ms. Tugba Idikat Icmeli (Ministry of the Environment and Urbanization), including additional material on policies and measures and greenhouse gas projections.
