Turkey's Joint First and Second Biennial Report

under the United Nations Framework Convention
on Climate Change

January 2016

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List of Abbreviations

AAU	Assigned Amount Unit
AFD	French Development Agency
BR	Biennial Report
C10F18	Perfluorodecalin
C2F6	Hexafluoroethane
C3F8	Octafluoropropane
C4F10	Decafluorobutane
C4F8	Octafluorocyclobutane
C5F12	Dodecafluoropentane
C6F14	Perfluorohexane
c-C3F6	Hexafluoropropylene
CBCC	Coordination Board on Climate Change
CER	Certified Emission Reduction
CF4	Carbon Tetrafluoride
CH4	Methane
CMP	Conference of the Parties Serving as the Meeting of the Parties to the Kyoto Protocol
CO	Carbon Monoxide
CO2	Carbon Dioxide
CO2-eq	Carbon Dioxide Equivalent
COP	Conference of the Parties
CRF	Common Reporting Format
EBRD	European Bank for Reconstruction and Development
EIB	European Investment Bank
ERU	Emission Reduction Unit
EU	European Union
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Greenhouse Gas
GWh	Gigawatt Hour
HFCs	Hydrofluorocarbons
INDC	Intended Nationally Determined Contribution
IPCC	Intergovernmental Panel on Climate Change
KfW	Reconstruction Credit Institute
KT	Kiloton
lCER	Long-term Certified Emission Reduction
LULUCF	Land Use, Land Use Change and Forestry
MENR	Ministry of Energy and Natural Resources
MFAL	Ministry of Food, Agriculture and Livestock
MFWA	Ministry of Forestry and Water Affairs
MoEU	Ministry of Environment and Urbanisation
MTMAC	Ministry of Transport, Maritime Affairs and Communications

N2O	Nitrous Oxide
NF3	Nitrogen Trifluoride
NIR	National Inventory Report
NMVOC	Non-Methane Volatile Organic Compounds
NOX	Nitrogen Oxide
ODA	Official Development Assistance
ODS	Ozone Depleting Substances
OECD	Organisation for Economic Cooperation and Development
OOF	Other Official Flows
PFCs	Perfluorocarbons
POPs	Persistent Organic Pollutants
SF6	Sulfur Hexafluoride
SMEs	Small and Medium Enterprises
tCER	Temporary Certified Emission Reduction
TOE	Tonne of Oil Equivalent
TUBITAK	Scientific and Technological Research Council of Turkey
TurkStat	Turkish Statistical Institute
TWh	Terawatt Hour
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
USD	The United States Dollar
WB	World Bank

Chapter I: Introduction

Climate change is a global human development challenge which is threatening sustainability of ecosystems and brings about serious economic and social challenges for billions of people and nations around the world. Turkey is not an exception, and is a country highly vulnerable to climate change.

Turkey recognizes that climate change represents a pressing and complex problem that can lead to serious environmental and socio-economic consequences and that it has become one of the most significant threats to the lives of future generations due to its long-term and cross sectoral effects. Efforts are necessary to limit emissions of greenhouse gases, the main cause of anthropogenic climate change, and to pursue multilateral international cooperation as nations seek to reduce impacts from and adapt to climate change.

When the United Nations Framework Convention on Climate Change (UNFCCC) was adopted in 1992, Turkey, as an Organisation for Economic Cooperation and Development (OECD) member, was included among the Annex I and Annex II countries which bear most of the burden of the commitments made under the agreement. However, Turkey did not engage actively in Convention implementation until 2001, following negotiations which resulted in UNFCCC parties agreeing that Turkey's "special circumstances" should be recognized and that it could invoke the "common but differentiated responsibilities" principle under the Convention. As a result of decision 26/CP.7 of the UNFCCC adopted in 7th Conference of Parties (CoP7) held in Marrakech in 2001, Turkey was removed from Annex II of the UNFCCC and State Parties were invited to recognize the special conditions which place Turkey in a different position from other Annex I countries. After this decision, Turkey became a party to UNFCCC on 24 May 2004. Then, it became an official party to the Kyoto Protocol on 26 August 2009. However, when Kyoto Protocol was adopted, Turkey was not in Annex-B as it was not a Party to the UNFCCC, thus it didn't have any quantified emission reduction or limitation targets. Nevertheless, Turkey undertakes significant activities toward decreasing emissions in the fields of energy efficiency, promotion of renewable energy, transportation and waste management. In addition, Turkey makes active efforts to participate in voluntary markets for emission credits through emission reduction projects.

With regards to reporting requirements, Turkey has submitted its First National Communication on Climate Change in 2007 and the Fifth National Communication on Climate Change where second, third, fourth and fifth communications are submitted together in 2013 to the UNFCCC. As of January 2016, Turkey submits its Sixth National Communication on Climate Change, where the works carried out after the fifth communication and the issues not included in the previous communications have been covered. Hereby, following the provisions of Decision 2/CP.17 and 9/CP.18, Turkey submits its Joint First and Second Biennial Report to the UNFCCC.

I.A. National Circumstances

As explained in the Sixth National Communication, according to the Turkish Statistical Institute's data, Turkey's population which was 56.47 million in 1990 reached 77.7 million as of 2014. The population is estimated to reach about 93.5 million in 2050. In Turkey, the urban population increases in direct proportion to the total population and a decline is observed in the rural population. Turkey with a 8,592 km long coastal border is located between mid-latitude climate zone and subtropical climate zone and within the Mediterranean macro-climatic zones in general.

The Gross Domestic Product (GDP) which showed a continuous increase between 2001-2008, showed a decrease in 2009 as a result of the economic crisis that affected the country in 2008 and which had a world-wide effect. With the measures taken, GDP again increased and showed a stable trend between 2011-2014.

In Turkey, oil took 28% (93% imported), natural gas 31% (98.9% imported) and coal 29% (56% imported) share in primary energy consumption which was 120.3 million TOE in 2013. Indigenous lignite and hydro energy are other energy consumption resources with 11% and 4% shares respectively. The shares of wind, solar and geothermal energy in consumption are around 1% for each. On the other hand, in 2013, building sector (housing and services) took 35%, industry sector 33%, transport sector 26%, agriculture 2% and non-energy 4% share within the total energy consumption.

In 2013, Turkey's electricity consumption increased by 1.2% compared to the previous year and became 245.5 TWh 4% of which (8,792 GWh) was generated from renewable sources mainly from wind and geothermal and 44%, 26% and 25% was met from natural gas, coal and hydro-electric respectively. Therefore, 12% of the total primary energy supply in 2013 in Turkey was met from renewable energy sources. As of the end of 2013, 32%, 37%, 19%, 5% and 6% of the renewable energy supply were obtained from biomass sources, hydraulic resources, geothermal resources, wind and solar energy respectively.

The share of Turkish industry sector in the GDP in 2013 was 15.3% with the current prices. When the product sales amounts are examined, according to the 2013 data, food industry and textile/apparel industry are at the forefront with 14.9% and 13.2% shares respectively. When shares of the sectors in country's exports are reviewed, textiles/apparel/leather sector take the first place with 18.1% and followed by automotive industry with 12.6%. 99.8% of the total number of enterprises in the industry sector consists of Small and Medium Sized Enterprises (SMEs).

According to the data in 2013 Energy Balance tables, 25.47% of the primary energy consumption which is 89.42 million TOE in total was from the transport sector with 22.77 million TOE. 91% of primary energy consumption of this sector is road transportation, 5.5% is airway transportation, 1.6% is maritime transportation, 1.1% is pipelines and 0.7% is railway transportation.

Waste generation per capita in Turkey has been decreasing since 1998 as a result of the increase in the portion of the population living in cities, the campaigns to produce less waste and the use of packaging that create less waste in the industry. With the establishment of local waste associations introduced with the Waste Management Action Plan and the landfills begun to be operated by this means, as of 2008 a rapid increase has been observed in the waste services provided in Turkey. In particular, with the Wastewater Treatment Action Plan prepared within the same year, the actions in the treatment of domestic and municipal wastewater in metropolis have been accelerated and a progress has been shown in the wastewater treatment in conjunction with the basin management works. Finally it worths mentioning that the National Recycling Strategy and Action Plan has been prepared and put into effect as of 2015.

Despite a decline over the years in the total agricultural lands in Turkey, the added value derived from the agricultural sector has been gradually increasing. According to statistics of year 2009, the total area of the agricultural lands in Turkey together with the perennial area is 24.3 million ha. In 2011, a decrease was seen in the total agricultural land; however, it is considered that there was no significant change in the last 3 years.

Turkey is quite rich in terms of biodiversity and about 2% of the species defined in the entire world show dispersion in Turkey. Eight thousands of the species defined in Turkey (4 thousand plant and 4 thousand animal species) are endemic. In addition, up to 50 animal and up to 1,284 plant species are endangered. 8 animal species and 11 plant species are estimated to be extinct in Turkey.

In Turkey, forests are managed according to the sustainable forest management principles and the country is one of the few countries in the world that has increased its forest areas. The forest area which was 20.2 million hectares in 1973 when the first forest inventory was carried out increased to 21.9 million hectares as of 2013. The annual net carbon accumulation increased to 13.94 million tons (51.10 million t CO_2-eq) in 2013.

According to the World Tourism Organization data, Turkey has become one of the world's most important tourism centers by maintaining its 6th position in the rankings of countries that attract the tourists most in 2013. Tourism sector interacts with 54 different sectors with the purchase of a total of 26 billion US dollars for one year. Several studies (i.e. eco-labels such as Blue Flag and Green Star) are carried out in order to make tourism activities sustainable in Turkey.

Turkey's consumable surface and ground water potential is 112 billion m^3 per year. Utilization rate of the current 112 billion m^3 of available water resources is still around 36%. The amount of water available per person per year in Turkey is about 1,519 m^3. 32 billion m^3 of the available water is used for irrigation, 7 billion m^3 is used for drinking and 5 billion m^3 is used in the industry. In this case, about 74% of Turkey's water resources are used for irrigation, 11% is used for industry, and 15% is used for urban consumption.

Chapter II: Information on Greenhouse Gas Emissions and Trends

As an Annex I party to Convention, Turkey is required to develop annual inventories on emissions and removals of greenhouse gases (GHG) not controlled by the Montreal Protocol using the Revised Intergovernmental Panel on Climate Change (IPCC) Guidelines and IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories.

The Turkish Statistical Institute (TurkStat) is the responsible agency for compiling the National Greenhouse Gases Inventory. Turkey's greenhouse gas emissions inventory is prepared by "Greenhouse Gas Emissions Inventory Working Group" which is set up by the decision of the Coordination Board on Climate Change (CBCC). TurkStat is the responsible organization for the coordination of working group.

The main institutions involved in GHG inventory are;

- Turkish Statistical Institute (TurkStat), (Environment, Energy and Transport Statistics Department)
- Ministry of Food, Agriculture and Livestock (MFAL), (General Directorate of Agriculture Reform)
- Ministry of Forestry and Water Affairs (MFWA), (General Directorate of Forest)
- Ministry of Environment and Urbanisation (MoEU), (General Directorate of Environmental Management)
- Ministry of Transport, Maritime Affairs and Communications (MTMAC), (General Directorate of Foreign Affairs and European Union)
- Ministry of Energy and Natural Resources (MENR). (General Directorate of Energy Affairs).

On 12 November 2015, Turkey submitted its National Inventory Report (NIR)[1], along with annual greenhouse gas inventories for 1990 to 2013. The emission data submitted to the UNFCCC with referred NIR was used to compile BR Table 1 on Emission Trends in this report.[2] The Emission Inventory includes direct GHGs as carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), F gases, and GHG precursors as nitrogen oxides (NOx), non-methane volatile organic compounds (NMVOC) and carbon monoxide (CO), and GHG precursor SO2 emissions originated from energy, industrial processes and product use agricultural activities, and waste. The emissions and removals from land use, land use change and forestry (LULUCF) are also included in the inventory.

Except for the last one, the national GHG emission inventories are prepared using Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories, IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories (2000) and IPCC Good Practice Guidance for LULUCF (2003). According to the decision of UNFCCC Secretariat for use of 2006 IPCC Guidelines for National Greenhouse Gas Inventories by Annex I countries as of 2015, the inventory for years 1990 to 2013 was prepared and presented in 2015 within the framework of the criteria stated by 2006 IPCC Guidelines. In this context, in relation to the emissions of years 1990 to 2012, the GHG emissions originating from energy, industrial processes and product use, agriculture, forestry and other land use and waste sectors were revised.

Total GHG emissions as CO2 equivalent for the year 2013 were 459.1 million tonnes (excluding LULUCF). In overall 2013 emissions, energy sector had the largest portion with 67.8%. The energy sector was followed by the sectors of industrial processes and product use with 15.7%, agriculture with 10.8% and waste with 5.7%. The vast majority of energy sector emissions is caused by the combustion of fuels and 24.8% of this is due to the combustion of fuels in energy industry, 15% is due to the combustion of fuels in transportation, 13.6% is due to the combustion of fuels in industry sector and 12.8% is due to the combustion of fuels in other sectors (commercial/institutional, residential and

[1] The submitted National Greenhouse Gas Inventory Report (NIR)1990-2013 can be accessed via UNFCCC web-site: http://unfccc.int/files/national_reports/annex_i_ghg_inventories/national_inventories_submissions/application/zip/tur-2015-nir-9nov15.zip

[2] The submitted Common Reporting Format (CRF) Tables 1990-2013 can be accessed via UNFCCC web-site: http://unfccc.int/files/national_reports/annex_i_ghg_inventories/national_inventories_submissions/application/zip/tur-2015-crf-12nov15.zip

agriculture/forestry/fishing sub-sectors). LULUCF sink value reached 58.70 million tons of CO2-eq. for 2013 and 2013 total greenhouse gas emissions was 400.40 million tons of CO2-eq. including LULUCF.

Consequently, the sectors have an increasing trend from 1990 to 2013 which included energy (136.6%), industrial processes (131.8%), LULUCF (94.5%), waste (86.9%) and agriculture (19.7%). The main reasons of the increase for all sectors are population growth, a growing economy and an increase in energy demand. There is also increasing trend of removals by sink from 1990 to 2013 for LULUCF (94.5%) sector. The main reasons of the increasing trend of removals by LULUCF sector are improvements in sustainable forest management, afforestations, rehabilitation of degraded forests, reforestations on forest land and conversion of coppices to high forests in forest land remaining forest land, efficient forest fire management and protection activities, conversions to perennial croplands from annual croplands and grasslands, and conversions to grasslands from annual croplands.

The highest portion of total CO2 emissions originated from energy sector with 82.2%. The remaining 17.6% originated from industrial processes and 0.2% from agriculture in 2013. CO2 emissions from energy decreased 2.9% compared to 2012 while increased 141.5% as compared to 1990. CO2 emissions from industrial processes increased 6.1% compared to 2012 and 115.1% as compared to 1990. The largest portion of CH4 emissions originated from agriculture activities with 46.4% while 36.7% from waste, and 16.8% from energy and industrial processes. CH4 emissions from agriculture increased 4.5% compared to 2012. It increased 11% as compared to 1990. CH4 emissions from waste decreased 6% compared to 2012. However, it increased 92% as compared to 1990 depending on increase in the amount of managed waste. While 79.4% of N2O emission was from agricultural activities, 7.9% was from waste, 4.3% was from industrial processes, and 8.4% was from energy. There is a 10.37% and 36.9% increase in N2O emissions as compared to 2012 and 1990 respectively. Emissions of CO, NOx, NMVOC are also included in the NIR because they influence climate change indirectly. CO emissions are 2.5 Mt in 2013 with 99% of them from energy sector. NOx emissions are about 1 Mt in 2013 and 99% of which is from energy. NMVOC emissions are 0,9 Mt in 2013. The largest portion is from industrial process and product uses with 38% and this figure is followed by energy with 28%.

For further information on national inventory arrangements as well as preparation of emission inventories and calculations, with details on emission sources, emission factors, difference between reference and sectoral approach, emission trends, fluctuations, changes, uncertainty estimations and key source categories; please refer to above mentioned NIR and “Chapter 3 on Inventory of GHG Emissions and Sink” of Turkey’s Sixth National Communication.

TABLE 1 Inventory 2013

EMISSION TRENDS: SUMMARY Submission 2015 v1

(Part 1 of 4) TURKEY

GREENHOUSE GAS EMISSIONS	Base year(1)	1990	1991	1992	1993	1994	1995	1996	1997	1998
	CO_2 equivalent (kt)									
CO_2 emissions without net CO_2 from LULUCF	153,826.86	153,826.86	159,410.50	164,538.56	172,922.21	169,669.74	184,296.66	200,855.29	215,094.28	214,572.83
CO_2 emissions with net CO_2 from LULUCF	123,651.24	123,651.24	127,598.55	140,320.92	141,762.83	136,725.44	154,125.52	170,202.16	183,891.54	179,919.75
CH_4 emissions without CH_4 from LULUCF	46,764.82	46,764.82	48,130.78	48,278.14	48,512.87	48,469.97	48,474.29	49,055.93	48,456.06	48,830.41
CH_4 emissions with CH_4 from LULUCF	46,764.84	46,764.84	48,130.79	48,278.16	48,512.90	48,470.02	48,474.31	49,055.95	48,456.07	48,830.42
N_2O emissions without N_2O from LULUCF	16,969.86	16,969.86	16,612.04	17,311.52	18,393.58	15,816.81	16,238.27	17,233.71	17,444.35	19,272.23
N_2O emissions with N_2O from LULUCF	16,969.87	16,969.87	16,612.05	17,311.53	18,393.59	15,816.85	16,238.28	17,233.73	17,444.36	19,272.24
HFCs	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
PFCs	603.43	603.43	744.35	681.09	685.15	604.21	516.43	520.26	516.82	517.29
Unspecified mix of HFCs and PFCs										
SF_6	NE	NE	NE	NE	NE	NE	NE	356.64	582.97	629.28
NF_3										
Total (without LULUCF)	218,164.98	218,164.98	224,897.67	230,809.30	240,513.82	234,560.73	249,525.65	268,021.83	282,094.48	283,822.04
Total (with LULUCF)	187,989.38	187,989.38	193,085.73	206,591.69	209,354.47	201,616.52	219,354.53	237,368.73	250,891.75	249,168.98
Total (without LULUCF, with indirect)	218,164.98	218,164.98	224,897.67	230,809.30	240,513.82	234,560.73	249,525.65	268,021.83	282,094.48	283,822.04
Total (with LULUCF, with indirect)	187,989.38	187,989.38	193,085.73	206,591.69	209,354.47	201,616.52	219,354.53	237,368.73	250,891.75	249,168.98

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year(1)	1990	1991	1992	1993	1994	1995	1996	1997	1998
	CO_2 equivalent (kt)									
1. Energy	131,565.75	131,565.75	135,615.53	141,285.74	149,060.30	145,560.75	158,808.63	173,914.50	186,993.09	186,587.12
2. Industrial processes and product use	31,078.14	31,078.14	32,488.22	31,913.69	32,342.87	31,960.39	33,691.65	35,435.78	37,296.61	37,081.97
3. Agriculture	41,598.46	41,598.46	42,286.06	42,536.88	43,440.66	40,726.95	40,168.62	41,217.36	39,506.48	41,272.86
4. Land use, land-use change and forestry(5)	-30,175.60	-30,175.60	-31,811.94	-24,217.61	-31,159.34	-32,944.21	-30,171.12	-30,653.10	-31,202.73	-34,653.07
5. Waste	13,922.63	13,922.63	14,507.85	15,073.00	15,669.98	16,312.63	16,856.75	17,454.19	18,298.29	18,880.09
6. Other										
Total (including LULUCF)(5)	187,989.38	187,989.38	193,085.73	206,591.69	209,354.47	201,616.52	219,354.53	237,368.73	250,891.75	249,168.98

TABLE 1 Inventory 2013

EMISSION TRENDS: SUMMARY Submission 2015 v1

(Part 2 of 4) TURKEY

GREENHOUSE GAS EMISSIONS	1999	2000	2001	2002	2003	2004	2005	2006	2007
	CO_2 equivalent (kt)								
CO_2 emissions without net CO_2 from LULUCF	212,381.59	239,028.41	223,614.68	232,183.85	248,132.02	260,066.20	285,926.90	309,820.33	340,598.73
CO_2 emissions with net CO_2 from LULUCF	178,470.27	202,850.19	183,135.34	194,825.54	205,020.92	217,897.01	241,999.47	263,003.87	295,009.26
CH_4 emissions without CH_4 from LULUCF	50,815.25	51,022.90	50,582.09	48,895.26	50,283.35	50,153.25	52,216.90	54,248.11	56,968.93
CH_4 emissions with CH_4 from LULUCF	50,815.26	51,022.94	50,582.10	48,895.27	50,283.36	50,153.26	52,216.91	54,248.12	56,968.95
N_2O emissions without N_2O from LULUCF	19,464.97	19,004.17	16,699.73	17,646.62	18,317.21	19,226.58	19,663.58	20,251.62	19,743.79
N_2O emissions with N_2O from LULUCF	19,464.97	19,004.20	16,699.74	17,646.63	18,317.22	19,226.59	19,663.59	20,251.63	19,743.80
HFCs	NO	900.27	958.63	1,560.83	1,987.39	2,451.61	2,616.90	3,002.72	3,612.32
PFCs	514.85	515.12	515.84	519.08	518.56	523.31	487.76	404.62	NE
Unspecified mix of HFCs and PFCs									
SF_6	493.03	308.03	294.26	454.81	457.37	672.14	819.20	869.18	908.29
NF_3									
Total (without LULUCF)	283,669.68	310,778.90	292,665.22	301,260.45	319,695.90	333,093.10	361,731.24	388,596.57	421,832.06
Total (with LULUCF)	249,758.38	274,600.75	252,185.91	263,902.16	276,584.83	290,923.92	317,803.82	341,780.14	376,242.61
Total (without LULUCF, with indirect)	283,669.68	310,778.90	292,665.22	301,260.45	319,695.90	333,093.10	361,731.24	388,596.57	421,832.06
Total (with LULUCF, with indirect)	249,758.38	274,600.75	252,185.91	263,902.16	276,584.83	290,923.92	317,803.82	341,780.14	376,242.61

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	1999	2000	2001	2002	2003	2004	2005	2006	2007
	CO_2 equivalent (kt)								
1. Energy	186,319.89	213,775.61	197,204.89	205,198.20	218,242.24	228,513.04	251,828.68	275,126.20	306,412.74
2. Industrial processes and product use	35,781.05	36,247.47	36,559.21	37,750.39	41,041.47	43,394.32	46,866.52	48,393.70	50,211.07
3. Agriculture	41,724.97	40,095.35	37,387.00	36,153.33	37,591.75	37,483.62	38,459.86	39,502.25	38,995.88
4. Land use, land-use change and forestry[5]	-33,911.30	-36,178.16	-40,479.31	-37,358.29	-43,111.07	-42,169.18	-43,927.43	-46,816.44	-45,589.45
5. Waste	19,843.77	20,660.48	21,514.13	22,158.53	22,820.44	23,702.12	24,576.19	25,574.43	26,212.37
6. Other									
Total (including LULUCF)[5]	249,758.38	274,600.75	252,185.91	263,902.16	276,584.83	290,923.92	317,803.82	341,780.14	376,242.61

TABLE 1 Inventory 2013

EMISSION TRENDS: SUMMARY Submission 2015 v1

(Part 3 of 4) TURKEY

GREENHOUSE GAS EMISSIONS	2008	2009	2010	2011	2012	2013	Change from base to latest reported year
	CO_2 equivalent (kt)						(%)
CO_2 emissions without net CO_2 from LULUCF	330,113.31	318,479.56	326,105.11	343,708.37	368,338.79	363,396.29	136.24
CO_2 emissions with net CO_2 from LULUCF	287,910.36	272,871.16	278,645.64	294,098.93	317,488.21	304,697.29	146.42
CH_4 emissions without CH_4 from LULUCF	58,334.83	58,328.76	60,441.23	63,187.54	67,606.78	65,810.94	40.73
CH_4 emissions with CH_4 from LULUCF	58,334.88	58,328.77	60,441.23	63,187.54	67,606.79	65,810.96	40.73
N_2O emissions without N_2O from LULUCF	17,923.43	19,673.73	19,477.88	19,462.72	21,044.14	23,225.67	36.86
N_2O emissions with N_2O from LULUCF	17,923.47	19,673.73	19,477.88	19,462.72	21,044.15	23,225.69	36.86
HFCs	3,180.26	3,459.50	4,882.28	5,230.55	6,305.04	5,705.87	
PFCs	NE	NE	NE	NE	NE	NE	
Unspecified mix of HFCs and PFCs							
SF_6	804.29	766.49	835.48	906.49	926.43	963.49	
NF_3							
Total (without LULUCF)	410,356.13	400,708.05	411,741.98	432,495.67	464,221.17	459,102.27	110.44
Total (with LULUCF)	368,153.26	355,099.65	364,282.52	382,886.24	413,370.63	400,403.30	112.99
Total (without LULUCF, with indirect)	410,356.13	400,708.05	411,741.98	432,495.67	464,221.17	459,102.27	110.44
Total (with LULUCF, with indirect)	368,153.26	355,099.65	364,282.52	382,886.24	413,370.63	400,403.30	112.99

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2008	2009	2010	2011	2012	2013	Change from base to latest reported year
	CO_2 equivalent (kt)						(%)
1. Energy	294,179.45	280,521.54	284,789.80	297,626.97	320,763.49	311,246.97	136.57
2. Industrial processes and product use	52,635.41	54,866.47	59,976.96	65,586.66	69,567.21	72,026.05	131.76
3. Agriculture	36,926.26	38,451.93	39,797.70	41,594.29	46,337.76	49,807.00	19.73
4. Land use, land-use change and forestry[5]	-42,202.87	-45,608.39	-47,459.46	-49,609.43	-50,850.55	-58,698.97	94.52
5. Waste	26,615.00	26,868.10	27,177.52	27,687.74	27,552.71	26,022.25	86.91
6. Other							
Total (including LULUCF)[5]	368,153.26	355,099.65	364,282.52	382,886.24	413,370.63	400,403.30	112.99

Documentation box

(1) The column "Base year" should be filled in only by those Parties with economies in transition that use a base year different from 1990 in accordance with the relevant decisions of the COP. For these Parties, this different base year is used to calculate the percentage change in the final column of this table.

(2) Fill in net emissions/removals as reported in table Summary 1.A. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(3) In accordance with the UNFCCC reporting guidelines, for Parties that decide to report indirect CO2 the national totals shall be provided with and without indirect CO_2.

(4) In accordance with the UNFCCC reporting guidelines, HFC and PFC emissions should be reported for each relevant chemical. However, if it is not possible to report values for each chemical (i.e. mixtures, confidential data, lack of disaggregation), this row could be used for reporting aggregate figures for HFCs and PFCs, respectively. Note that the unit used for this row is kt of CO_2 equivalent and that appropriate notation keys should be entered in the cells for the individual chemicals.

(5) Includes net CO_2, CH_4 and N_2O from LULUCF.

Documentation box:

• Parties should provide detailed explanations on emissions trends in chapter 2: Trends in Greenhouse Gas Emissions and, as appropriate, in the corresponding Chapters 3 - 8 of the national inventory report (NIR). Use this documentation box to provide references to relevant sections of the NIR if any additional information and further details are needed to understand the content of this table.

• Use the documentation box to provide explanations if potential emissions are reported.

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year(1)	1990	1991	1992	1993	1994	1995	1996	1997	1998
	(kt)									
1. Energy	123,664.58	123,664.58	127,851.83	133,542.56	141,281.15	138,339.94	151,450.91	166,538.04	179,181.91	178,753.81
A. Fuel combustion (sectoral approach)	123,444.67	123,444.67	127,588.83	133,289.41	141,050.54	138,121.33	151,242.06	166,329.90	178,975.69	178,559.89
1. Energy industries	33,820.11	33,820.11	35,766.83	39,657.28	39,021.17	45,216.41	46,293.92	49,144.11	55,379.47	59,212.97
2. Manufacturing industries and construction	33,696.84	33,696.84	36,283.07	35,411.69	37,353.16	33,379.57	38,367.59	47,504.15	52,873.45	53,984.72
3. Transport	26,138.14	26,138.14	24,862.90	25,503.51	31,130.26	29,615.04	32,977.75	35,048.58	33,442.22	31,523.39
4. Other sectors	29,789.58	29,789.58	30,676.04	32,716.92	33,545.94	29,910.30	33,602.80	34,633.06	37,280.55	33,838.81
5. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
B. Fugitive emissions from fuels	219.79	219.79	262.87	253.03	230.48	218.48	208.72	208.02	206.10	193.79
1. Solid fuels	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
2. Oil and natural gas and other emissions from energy	219.79	219.79	262.87	253.03	230.48	218.48	208.72	208.02	206.10	193.79
C. CO_2 transport and storage	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
2. Industrial processes	29,699.57	29,699.57	31,119.66	30,534.38	31,011.41	30,874.26	32,417.12	33,780.20	35,376.20	35,158.53
A. Mineral industry	14,795.61	14,795.61	16,147.99	16,589.06	17,177.35	17,736.66	18,868.94	18,978.32	20,126.21	20,084.98
B. Chemical industry	1,226.11	1,226.11	1,108.44	1,123.29	1,134.49	1,121.58	1,267.48	1,222.48	1,187.28	1,222.41
C. Metal industry	13,501.09	13,501.09	13,678.93	12,662.01	12,529.42	11,844.44	12,080.23	13,359.72	13,822.74	13,650.09
D. Non-energy products from fuels and solvent use	176.76	176.76	184.31	160.02	170.16	171.57	200.46	219.69	239.97	201.05
E. Electronic industry										
F. Product uses as ODS substitutes										
G. Other product manufacture and use										
H. Other	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE
3. Agriculture	459.95	459.95	436.20	458.75	626.74	452.60	425.92	534.13	532.00	657.91
A. Enteric fermentation										
B. Manure management										
C. Rice cultivation										
D. Agricultural soils										
E. Prescribed burning of savannas										
F. Field burning of agricultural residues										
G. Liming	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
H. Urea application	459.95	459.95	436.20	458.75	626.74	452.60	425.92	534.13	532.00	657.91
I. Other carbon-containing fertilizers	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
J. Other										

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year(1)	1990	1991	1992	1993	1994	1995	1996	1997	1998
	(kt)									
4. Land use, land-use change and forestry (2)	-30,175.63	-30,175.63	-31,811.96	-24,217.64	-31,159.38	-32,944.31	-30,171.14	-30,653.14	-31,202.74	-34,653.08
A. Forest land	-28,064.62	-28,064.62	-29,721.00	-29,760.20	-30,018.68	-32,576.37	-29,750.24	-30,233.63	-32,845.61	-33,969.87
B. Cropland	-47.63	-47.63	-41.29	-34.94	-28.64	-22.29	-15.99	-9.61	-3.26	3.01
C. Grassland	-120.12	-120.12	-120.71	-121.33	-121.92	-122.50	-123.09	-123.68	-124.30	-124.89
D. Wetlands	1,741.74	1,741.74	991.58	8,893.76	185.39	690.47	341.33	594.51	2,664.71	510.11
E. Settlements	683.21	683.21	683.21	683.21	683.21	683.21	683.21	683.21	683.21	683.21
F. Other land	NO,NE	NO,NE	NO,NE	NO,NE	NO,NE	NO,NE	NO,NE	NO,NE	NO,NE	NO,NE
G. Harvested wood products	-4,368.20	-4,368.20	-3,603.75	-3,878.13	-1,858.75	-1,596.81	-1,306.36	-1,563.95	-1,577.50	-1,754.65
H. Other										
5. Waste	2.77	2.77	2.81	2.86	2.91	2.95	2.70	2.92	4.17	2.58
A. Solid waste disposal	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B. Biological treatment of solid waste										
C. Incineration and open burning of waste	2.77	2.77	2.81	2.86	2.91	2.95	2.70	2.92	4.17	2.58
D. Waste water treatment and discharge										
E. Other										
6. Other *(as specified in summary 1.A)*										
Memo items:										
International bunkers	931.33	931.33	1,139.55	1,152.18	1,290.45	1,139.32	1,395.79	1,398.10	1,871.02	2,030.65
Aviation	551.80	551.80	715.77	804.05	977.48	788.29	807.21	1,002.70	1,368.47	1,522.97
Navigation	379.52	379.52	423.78	348.13	312.97	351.03	588.58	395.40	502.55	507.68
Multilateral operations	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CO_2 emissions from biomass	33,749.10	33,749.10	33,768.96	33,752.19	33,468.68	33,284.25	33,094.76	32,988.15	32,890.15	32,697.38
CO_2 captured	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Long-term storage of C in waste disposal sites	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Indirect N_2O										
Indirect CO_2 (3)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Total CO_2 equivalent emissions without land use, land-use change and forestry	218,164.98	218,164.98	224,897.67	230,809.30	240,513.82	234,560.73	249,525.65	268,021.83	282,094.48	283,822.04
Total CO_2 equivalent emissions with land use, land-use change and forestry	187,989.38	187,989.38	193,085.73	206,591.69	209,354.47	201,616.52	219,354.53	237,368.73	250,891.75	249,168.98
Total CO_2 equivalent emissions, including indirect CO2, without land use, land-use	153,826.86	153,826.86	159,410.50	164,538.56	172,922.21	169,669.74	184,296.66	200,855.29	215,094.28	214,572.83
Total CO_2 equivalent emissions, including indirect CO2, with land use, land-use	123,651.24	123,651.24	127,598.55	140,320.92	141,762.83	136,725.44	154,125.52	170,202.16	183,891.54	179,919.75

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	1999	2000	2001	2002	2003	2004	2005	2006	2007
					(kt)				
1. Energy	177,637.10	204,584.17	188,871.17	197,092.68	210,107.14	220,337.36	243,226.91	266,176.91	295,554.22
A. Fuel combustion (sectoral approach)	177,458.98	204,416.46	188,716.64	196,944.56	209,962.06	220,197.23	243,085.37	266,041.86	295,421.36
1. Energy industries	63,003.33	67,961.34	70,389.02	63,926.65	63,868.80	64,525.13	81,458.42	90,863.51	107,897.75
2. Manufacturing industries and construction	48,887.96	66,375.92	54,655.80	67,935.99	76,450.43	78,130.30	81,293.12	89,414.59	92,021.54
3. Transport	33,341.11	35,188.58	35,231.24	34,978.12	36,553.36	40,726.63	40,591.23	44,365.49	51,109.43
4. Other sectors	32,226.58	34,890.61	28,440.58	30,103.80	33,089.47	36,815.17	39,742.60	41,398.27	44,392.63
5. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO
B. Fugitive emissions from fuels	178.00	167.58	154.40	147.99	144.95	140.00	141.41	134.93	132.73
1. Solid fuels	NE	NE	NE	NE	NE	NE	NE	NE	NE
2. Oil and natural gas and other emissions from energy production	178.00	167.58	154.40	147.99	144.95	140.00	141.41	134.93	132.73
C. CO_2 transport and storage	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
2. Industrial processes	34,008.81	33,824.46	34,214.14	34,559.55	37,453.96	39,094.50	42,082.95	43,045.82	44,472.84
A. Mineral industry	19,464.15	19,570.16	19,546.15	20,382.44	21,143.94	22,691.86	25,157.10	25,267.17	27,234.32
B. Chemical industry	1,045.96	1,029.30	1,026.64	1,286.46	1,257.58	1,298.75	1,492.19	1,591.32	1,306.06
C. Metal industry	13,251.07	12,952.62	13,440.54	12,623.21	14,791.35	14,762.74	15,029.90	15,740.66	15,496.86
D. Non-energy products from fuels and solvent use	247.63	272.40	200.82	267.44	261.07	341.14	403.76	446.68	435.60
E. Electronic industry									
F. Product uses as ODS substitutes									
G. Other product manufacture and use									
H. Other	IE	IE	IE	IE	IE	IE	IE	IE	IE
3. Agriculture	733.33	617.47	527.07	526.92	565.41	632.18	613.16	592.34	566.30
A. Enteric fermentation									
B. Manure management									
C. Rice cultivation									
D. Agricultural soils									
E. Prescribed burning of savannas									
F. Field burning of agricultural residues									
G. Liming	NE	NE	NE	NE	NE	NE	NE	NE	NE
H. Urea application	733.33	617.47	527.07	526.92	565.41	632.18	613.16	592.34	566.30
I. Other carbon-containing fertilizers	NE	NE	NE	NE	NE	NE	NE	NE	NE
J. Other									

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	1999	2000	2001	2002	2003	2004	2005	2006	2007
	(kt)								
4. Land use, land-use change and forestry [2]	-33,911.31	-36,178.22	-40,479.33	-37,358.31	-43,111.09	-42,169.19	-43,927.43	-46,816.46	-45,589.48
A. Forest land	-34,924.42	-35,229.35	-38,715.61	-38,626.20	-40,870.09	-40,291.29	-41,274.85	-42,553.08	-41,889.95
B. Cropland	9.39	-508.93	-516.08	-527.23	-529.14	-521.88	-517.15	-530.27	-149.31
C. Grassland	255.82	-1,098.79	-1,098.90	-1,099.01	-1,099.12	-1,099.23	-1,099.34	-1,099.45	-527.38
D. Wetlands	1,279.81	1,232.81	875.86	3,181.71	737.22	793.50	1,498.75	260.22	640.90
E. Settlements	683.21	683.21	629.49	629.49	629.49	629.49	629.49	629.49	570.61
F. Other land	NO,NE	NO,NE	NO,NE	NO,NE	NO,NE	NO,NE	NO,NE	NO,NE	NO,NE
G. Harvested wood products	-1,215.13	-1,257.17	-1,654.08	-917.07	-1,979.46	-1,679.80	-3,164.34	-3,523.38	-4,234.35
H. Other									
5. Waste	2.34	2.31	2.29	4.70	5.51	2.17	3.88	5.25	5.37
A. Solid waste disposal	NA	NA	NA	NA	NA	NA	NA	NA	NA
B. Biological treatment of solid waste									
C. Incineration and open burning of waste	2.34	2.31	2.29	4.70	5.51	2.17	3.88	5.25	5.37
D. Waste water treatment and discharge									
E. Other									
6. Other *(as specified in summary 1.A)*									
Memo items:									
International bunkers	2,407.08	2,876.52	2,339.70	4,338.08	4,730.00	6,146.51	6,704.53	6,134.51	6,066.89
Aviation	1,513.51	1,598.65	1,592.34	2,648.65	2,762.16	2,976.57	3,329.73	3,014.41	3,730.69
Navigation	893.57	1,277.87	747.36	1,689.43	1,967.84	3,169.94	3,374.80	3,120.10	2,336.20
Multilateral operations	NO	NO	NO	NO	NO	NO	NO	NO	NO
CO_2 emissions from biomass	31,440.85	30,233.35	29,079.51	27,972.95	26,915.88	25,903.37	24,934.01	24,208.01	23,391.67
CO_2 captured	NO	NO	NO	NO	NO	NO	NO	NO	NO
Long-term storage of C in waste disposal sites	NE	NE	NE	NE	NE	NE	NE	NE	NE
Indirect N_2O									
Indirect CO_2 [3]	NE	NE	NE	NE	NE	NE	NE	NE	NE
Total CO_2 equivalent emissions without land use, land-use change and forestry	283,669.68	310,778.90	292,665.22	301,260.45	319,695.90	333,093.10	361,731.24	388,596.57	421,832.06
Total CO_2 equivalent emissions with land use, land-use change and forestry	249,758.38	274,600.75	252,185.91	263,902.16	276,584.83	290,923.92	317,803.82	341,780.14	376,242.61
Total CO_2 equivalent emissions, including indirect CO2, without land use, land-	212,381.59	239,028.41	223,614.68	232,183.85	248,132.02	260,066.20	285,926.90	309,820.33	340,598.73
Total CO_2 equivalent emissions, including indirect CO2, with land use, land-use	178,470.27	202,850.19	183,135.34	194,825.54	205,020.92	217,897.01	241,999.47	263,003.87	295,009.26

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2008	2009	2010	2011	2012	2013	Change from base to latest reported year
	(kt)						%
1. Energy	281,874.38	268,122.90	272,187.36	285,001.40	307,496.57	298,698.70	141.54
A. Fuel combustion (sectoral approach)	281,739.56	267,984.76	272,031.31	284,850.97	307,352.96	298,553.26	141.85
1. Energy industries	114,005.32	104,191.40	102,302.66	109,894.26	120,298.98	113,561.12	235.78
2. Manufacturing industries and construction	58,566.12	49,666.76	60,580.01	57,336.62	64,966.65	62,014.08	84.04
3. Transport	47,192.82	46,823.07	44,480.89	47,211.16	61,425.09	67,638.63	158.77
4. Other sectors	61,975.30	67,303.53	64,667.74	70,408.92	60,662.24	55,339.43	85.77
5. Other	NO	NO	NO	NO	NO	NO	
B. Fugitive emissions from fuels	134.70	138.02	155.92	150.31	143.48	145.31	-33.89
1. Solid fuels	NE	NE	NE	NE	NE	NE	
2. Oil and natural gas and other emissions from energy production	134.70	138.02	155.92	150.31	143.48	145.31	-33.89
C. CO_2 transport and storage	0.13	0.13	0.13	0.13	0.13	0.13	0.00
2. Industrial processes	47,668.99	49,759.79	53,269.92	58,146.82	60,200.22	63,888.89	115.12
A. Mineral industry	30,312.11	30,627.19	33,794.72	36,997.26	38,682.95	41,323.25	179.29
B. Chemical industry	1,600.28	1,274.59	1,182.42	1,764.02	1,961.26	1,578.90	28.77
C. Metal industry	15,405.91	17,471.23	17,870.15	18,546.89	18,964.16	20,458.35	51.53
D. Non-energy products from fuels and solvent use	350.69	386.78	422.63	838.65	591.84	528.40	198.93
E. Electronic industry							
F. Product uses as ODS substitutes							
G. Other product manufacture and use							
H. Other	IE	IE	IE	IE	IE	IE	
3. Agriculture	564.84	592.72	644.98	557.55	639.77	807.30	75.52
A. Enteric fermentation							
B. Manure management							
C. Rice cultivation							
D. Agricultural soils							
E. Prescribed burning of savannas							
F. Field burning of agricultural residues							
G. Liming	NE	NE	NE	NE	NE	NE	
H. Urea application	564.84	592.72	644.98	557.55	639.77	807.30	75.52
I. Other carbon-containing fertilizers	NE	NE	NE	NE	NE	NE	
J. Other							

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2008	2009	2010	2011	2012	2013	Change from base to latest reported year
	(kt)						%
4. Land use, land-use change and forestry [2]	-42,202.95	-45,608.41	-47,459.47	-49,609.44	-50,850.58	-58,699.00	94.52
A. Forest land	-38,078.44	-40,826.82	-42,832.61	-44,086.38	-44,350.10	-51,095.13	82.06
B. Cropland	-144.98	-155.39	-145.64	-148.50	-142.78	-137.13	187.91
C. Grassland	-527.49	-527.60	-527.71	-527.82	-527.93	-528.07	339.62
D. Wetlands	16.68	237.38	60.87	7.85	NO,NE	NO,NE	
E. Settlements	570.61	570.61	570.61	570.61	570.61	570.61	-16.48
F. Other land	NO,NE	NO,NE	NO,NE	NO,NE	NO,NE	NO,NE	
G. Harvested wood products	-4,039.34	-4,906.58	-4,584.98	-5,425.20	-6,400.37	-7,509.27	71.91
H. Other							
5. Waste	5.10	4.15	2.85	2.60	2.23	1.40	-49.49
A. Solid waste disposal	NA	NA	NA	NA	NA	NA	
B. Biological treatment of solid waste							
C. Incineration and open burning of waste	5.10	4.15	2.85	2.60	2.23	1.40	-49.49
D. Waste water treatment and discharge							
E. Other							
6. Other *(as specified in summary 1.A)*							
Memo items:							
International bunkers	7,301.74	8,085.26	8,247.70	8,705.40	10,283.18	11,531.30	1,138.16
Aviation	4,991.42	5,254.72	5,858.47	6,769.01	7,684.30	8,660.75	1,469.54
Navigation	2,310.32	2,830.54	2,389.23	1,936.39	2,598.88	2,870.55	656.35
Multilateral operations	NO	NO	NO	NO	NO	NO	
CO_2 emissions from biomass	22,541.05	21,876.50	21,430.32	16,799.59	11,865.92	20,660.58	-38.78
CO_2 captured	NO	NO	NO	NO	NO	NO	
Long-term storage of C in waste disposal sites	NE	NE	NE	NE	NE	NE	
Indirect N_2O							
Indirect CO_2 [3]	NE	NE	NE	NE	NE	NE	
Total CO_2 equivalent emissions without land use, land-use change and forestry	410,356.13	400,708.05	411,741.98	432,495.67	464,221.17	459,102.27	110.44
Total CO_2 equivalent emissions with land use, land-use change and forestry	368,153.26	355,099.65	364,282.52	382,886.24	413,370.63	400,403.30	112.99
Total CO_2 equivalent emissions, including indirect CO2, without land use, land-	330,113.31	318,479.56	326,105.11	343,708.37	368,338.79	363,396.29	136.24
Total CO_2 equivalent emissions, including indirect CO2, with land use, land-use	287,910.36	272,871.16	278,645.64	294,098.93	317,488.21	304,697.29	146.42

Documentation box

(1) The column "Base year" should be filled in only by those Parties with economies in transition that use a base year different from 1990 in accordance with the relevant decisions of the COP. For these Parties, this different base year is used to calculate the percentage change in the final column of this table.

(2) Fill in net emissions/removals as reported in table Summary 1.A. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(3) In accordance with the UNFCCC reporting guidelines, for Parties that decide to report indirect CO2 the national totals shall be provided with and without indirect CO_2.

(4) In accordance with the UNFCCC reporting guidelines, HFC and PFC emissions should be reported for each relevant chemical. However, if it is not possible to report values for each chemical (i.e. mixtures, confidential data, lack of disaggregation), this row could be used for reporting aggregate figures for HFCs and PFCs, respectively. Note that the unit used for this row is kt of CO_2 equivalent and that appropriate notation keys should be entered in the cells for the individual chemicals.

(5) Includes net CO_2, CH_4 and N_2O from LULUCF.

Documentation box:

• Parties should provide detailed explanations on emissions trends in chapter 2: Trends in Greenhouse Gas Emissions and, as appropriate, in the corresponding Chapters 3 - 8 of the national inventory report (NIR). Use this documentation box to provide references to relevant sections of the NIR if any additional information and further details are needed to understand the content of this table.

• Use the documentation box to provide explanations if potential emissions are reported.

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year(1)	1990	1991	1992	1993	1994	1995	1996	1997	1998
	(kt)									
1. Energy	263.48	263.48	258.24	255.98	252.61	231.58	233.51	230.32	247.43	249.60
A. Fuel combustion (sectoral approach)	139.31	139.31	140.27	143.31	140.00	128.84	133.69	133.00	138.71	129.82
1. Energy industries	0.46	0.46	0.47	0.54	0.54	0.61	0.66	0.70	0.80	0.84
2. Manufacturing industries and construction	2.16	2.16	2.36	2.13	2.11	1.86	2.09	2.90	3.26	3.53
3. Transport	3.55	3.55	3.40	3.67	4.43	4.33	4.76	5.10	6.18	6.54
4. Other sectors	133.13	133.13	134.03	136.97	132.91	122.04	126.17	124.29	128.48	118.91
5. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
B. Fugitive emissions from fuels	124.18	124.18	117.97	112.67	112.62	102.74	99.83	97.33	108.71	119.78
1. Solid fuels	97.29	97.29	86.04	80.90	81.90	72.30	67.54	62.80	70.67	81.13
2. Oil and natural gas and other emissions from energy	26.88	26.88	31.93	31.77	30.72	30.44	32.29	34.53	38.04	38.65
C. CO_2 transport and storage										
2. Industrial processes	3.18	3.18	3.07	3.02	3.12	3.22	3.43	3.58	3.58	3.44
A. Mineral industry										
B. Chemical industry	1.13	1.13	1.03	1.03	1.15	1.26	1.37	1.30	1.27	1.35
C. Metal industry	2.04	2.04	2.03	1.99	1.97	1.97	2.06	2.28	2.31	2.09
D. Non-energy products from fuels and solvent use	NA	NA	NA	NA	NA	NA	NA	NA,NE	NA,NE	NA,NE
E. Electronic industry										
F. Product uses as ODS substitutes										
G. Other product manufacture and use										
H. Other	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE
3. Agriculture	1,101.24	1,101.24	1,138.73	1,125.23	1,114.90	1,109.31	1,086.30	1,089.69	1,015.96	1,006.12
A. Enteric fermentation	995.50	995.50	1,030.49	1,021.84	1,007.28	994.21	974.62	976.49	912.72	895.84
B. Manure management	92.09	92.09	95.18	90.70	94.03	103.18	98.88	99.77	89.70	95.42
C. Rice cultivation	3.65	3.65	2.79	2.96	3.09	2.79	3.45	3.78	3.79	4.14
D. Agricultural soils	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
E. Prescribed burning of savannas	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
F. Field burning of agricultural residues	9.99	9.99	10.27	9.73	10.49	9.13	9.35	9.65	9.74	10.72
G. Liming										
H. Urea application										
I. Other carbon-containing fertilizers										
J. Other										

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year[1]	1990	1991	1992	1993	1994	1995	1996	1997	1998
	(kt)									
4. Land use, land-use change and forestry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Forest land	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B. Cropland										
C. Grassland										
D. Wetlands										
E. Settlements										
F. Other land										
G. Harvested wood products										
H. Other										
5. Waste	502.69	502.69	525.19	546.90	569.88	594.68	615.73	638.64	671.27	694.06
A. Solid waste disposal	387.67	387.67	408.79	429.13	450.77	474.26	490.80	512.66	539.14	568.69
B. Biological treatment of solid waste	0.77	0.77	0.77	0.77	0.77	0.77	0.64	0.72	0.72	0.67
C. Incineration and open burning of waste	2.69	2.69	2.74	2.78	2.83	2.87	2.63	2.85	4.06	2.51
D. Waste water treatment and discharge	111.56	111.56	112.90	114.21	115.50	116.78	121.67	122.42	127.35	122.19
E. Other										
6. Other *(as specified in summary 1.A)*										
Total CH_4 emissions without CH_4 from LULUCF	1,870.59	1,870.59	1,925.23	1,931.13	1,940.51	1,938.80	1,938.97	1,962.24	1,938.24	1,953.22
Total CH_4 emissions with CH_4 from LULUCF	1,870.59	1,870.59	1,925.23	1,931.13	1,940.52	1,938.80	1,938.97	1,962.24	1,938.24	1,953.22
Memo items:										
International bunkers	0.04	0.04	0.04	0.04	0.04	0.04	0.06	0.04	0.06	0.06
Aviation	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Navigation	0.04	0.04	0.04	0.03	0.03	0.03	0.05	0.04	0.05	0.05
Multilateral operations	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CO_2 emissions from biomass										
CO_2 captured										
Long-term storage of C in waste disposal sites										
Indirect N_2O										
Indirect CO_2 [3]										

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	1999	2000	2001	2002	2003	2004	2005	2006	2007
	(kt)								
1. Energy	284.89	304.00	274.80	264.88	265.03	264.51	280.17	290.36	363.06
A. Fuel combustion (sectoral approach)	121.60	122.09	108.77	110.48	113.02	115.09	113.94	113.87	116.57
1. Energy industries	0.90	1.03	1.05	0.96	0.95	0.93	1.13	1.30	1.57
2. Manufacturing industries and construction	2.96	4.16	2.88	3.92	4.48	4.55	4.35	5.21	5.51
3. Transport	6.95	8.27	7.91	7.37	7.66	7.94	8.20	9.21	10.67
4. Other sectors	110.79	108.64	96.94	98.24	99.94	101.66	100.25	98.15	98.82
5. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO
B. Fugitive emissions from fuels	163.28	181.91	166.02	154.40	152.01	149.42	166.24	176.49	246.50
1. Solid fuels	121.54	136.83	120.20	106.60	97.31	92.91	99.90	103.64	163.13
2. Oil and natural gas and other emissions from	41.75	45.07	45.82	47.80	54.70	56.51	66.34	72.85	83.37
C. CO_2 transport and storage									
2. Industrial processes	3.51	3.61	3.44	3.36	3.47	3.46	5.21	5.37	5.55
A. Mineral industry									
B. Chemical industry	1.41	1.36	1.35	1.39	1.32	1.27	1.09	1.61	1.61
C. Metal industry	2.09	2.25	2.09	1.97	2.15	2.19	4.12	3.76	3.94
D. Non-energy products from fuels and solvent use	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE
E. Electronic industry									
F. Product uses as ODS substitutes									
G. Other product manufacture and use									
H. Other	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE
3. Agriculture	1,012.64	969.98	948.35	866.49	895.91	856.51	887.60	919.24	930.78
A. Enteric fermentation	900.57	865.87	841.67	775.13	796.04	770.17	796.44	823.88	832.15
B. Manure management	98.12	89.61	92.89	77.19	85.47	70.68	73.97	77.84	82.98
C. Rice cultivation	4.48	4.00	4.07	4.14	4.48	4.83	5.86	6.83	6.47
D. Agricultural soils	NO	NO	NO	NO	NO	NO	NO	NO	NO
E. Prescribed burning of savannas	NO	NO	NO	NO	NO	NO	NO	NO	NO
F. Field burning of agricultural residues	9.47	10.49	9.72	10.04	9.92	10.83	11.33	10.68	9.18
G. Liming									
H. Urea application									
I. Other carbon-containing fertilizers									
J. Other									

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	1999	2000	2001	2002	2003	2004	2005	2006	2007
	(kt)								
4. Land use, land-use change and forestry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Forest land	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B. Cropland									
C. Grassland									
D. Wetlands									
E. Settlements									
F. Other land									
G. Harvested wood products									
H. Other									
5. Waste	731.58	763.34	796.70	821.08	846.93	881.65	915.69	954.96	979.36
A. Solid waste disposal	606.58	638.69	671.50	695.34	722.00	755.36	791.13	828.30	855.43
B. Biological treatment of solid waste	0.90	0.96	0.87	1.53	1.30	1.40	1.36	1.02	1.33
C. Incineration and open burning of waste	2.28	2.25	2.23	1.43	1.68	0.66	1.18	1.60	1.64
D. Waste water treatment and discharge	121.82	121.44	122.09	122.78	121.94	124.22	122.02	124.04	120.96
E. Other									
6. Other *(as specified in summary 1.A)*									
Total CH_4 emissions without CH_4 from LULUCF	2,032.61	2,040.92	2,023.28	1,955.81	2,011.33	2,006.13	2,088.68	2,169.92	2,278.76
Total CH_4 emissions with CH_4 from LULUCF	2,032.61	2,040.92	2,023.28	1,955.81	2,011.33	2,006.13	2,088.68	2,169.92	2,278.76
Memo items:									
International bunkers	0.09	0.13	0.08	0.17	0.20	0.31	0.34	0.31	0.24
Aviation	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.03
Navigation	0.08	0.12	0.07	0.16	0.18	0.29	0.31	0.29	0.21
Multilateral operations	NO	NO	NO	NO	NO	NO	NO	NO	NO
CO_2 emissions from biomass									
CO_2 captured									
Long-term storage of C in waste disposal sites									
Indirect N_2O									
Indirect CO_2 (3)									

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2008	2009	2010	2011	2012	2013	Change from base to latest reported year
	(kt)						%
1. Energy	424.66	430.26	438.69	441.53	458.97	424.26	61.02
A. Fuel combustion (sectoral approach)	161.43	177.67	176.44	150.43	151.33	149.71	7.46
1. Energy industries	1.64	1.51	1.50	1.44	1.72	1.65	258.04
2. Manufacturing industries and construction	2.85	2.77	3.11	3.10	3.08	3.46	59.83
3. Transport	10.67	11.09	11.59	11.81	13.06	13.56	282.00
4. Other sectors	146.27	162.30	160.24	134.08	133.48	131.04	-1.57
5. Other	NO	NO	NO	NO	NO	NO	
B. Fugitive emissions from fuels	263.23	252.60	262.25	291.10	307.64	274.56	121.10
1. Solid fuels	177.14	175.41	185.58	200.97	212.14	192.51	97.87
2. Oil and natural gas and other emissions from	86.09	77.18	76.67	90.13	95.50	82.05	205.19
C. CO_2 transport and storage							
2. Industrial processes	6.33	5.72	5.04	12.92	46.11	18.60	485.40
A. Mineral industry							
B. Chemical industry	1.60	1.63	1.71	1.55	1.51	1.41	24.30
C. Metal industry	4.73	4.09	3.33	11.37	44.60	17.19	741.46
D. Non-energy products from fuels and solvent use	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	
E. Electronic industry							
F. Product uses as ODS substitutes							
G. Other product manufacture and use							
H. Other	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	
3. Agriculture	907.57	893.21	958.09	1,038.17	1,170.10	1,222.49	11.01
A. Enteric fermentation	811.21	794.15	846.36	925.97	1,042.05	1,087.82	9.27
B. Manure management	80.36	81.99	94.79	94.52	109.62	115.80	25.75
C. Rice cultivation	6.86	6.67	6.83	6.85	8.26	7.63	108.66
D. Agricultural soils	NO	NO	NO	NO	NO	NO	
E. Prescribed burning of savannas	NO	NO	NO	NO	NO	NO	
F. Field burning of agricultural residues	9.13	10.40	10.11	10.83	10.18	11.25	12.54
G. Liming							
H. Urea application							
I. Other carbon-containing fertilizers							
J. Other							

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2008	2009	2010	2011	2012	2013	Change from base to latest reported year
	(kt)						%
4. Land use, land-use change and forestry	0.00	0.00	0.00	0.00	0.00	0.00	-4.94
A. Forest land	0.00	0.00	0.00	0.00	0.00	0.00	-4.94
B. Cropland							
C. Grassland							
D. Wetlands							
E. Settlements							
F. Other land							
G. Harvested wood products							
H. Other							
5. Waste	994.84	1,003.96	1,015.83	1,034.88	1,029.08	967.08	92.38
A. Solid waste disposal	874.93	884.01	896.50	916.02	910.80	861.16	122.14
B. Biological treatment of solid waste	1.10	1.26	0.78	1.16	0.62	0.64	-16.70
C. Incineration and open burning of waste	1.56	1.27	0.87	0.79	0.68	0.43	-84.17
D. Waste water treatment and discharge	117.25	117.42	117.68	116.90	116.99	104.85	-6.01
E. Other							
6. Other *(as specified in summary 1.A)*							
Total CH_4 emissions without CH_4 from LULUCF	2,333.39	2,333.15	2,417.65	2,527.50	2,704.27	2,632.44	40.73
Total CH_4 emissions with CH_4 from LULUCF	2,333.40	2,333.15	2,417.65	2,527.50	2,704.27	2,632.44	40.73
Memo items:							
International bunkers	0.25	0.29	0.26	0.22	0.29	0.32	722.94
Aviation	0.03	0.04	0.04	0.05	0.05	0.06	1,468.91
Navigation	0.21	0.26	0.22	0.18	0.24	0.26	641.23
Multilateral operations	NO	NO	NO	NO	NO	NO	
CO_2 emissions from biomass							
CO_2 captured							
Long-term storage of C in waste disposal sites							
Indirect N_2O							
Indirect CO_2 (3)							

Documentation box

(1) The column "Base year" should be filled in only by those Parties with economies in transition that use a base year different from 1990 in accordance with the relevant decisions of the COP. For these Parties, this different base year is used to calculate the percentage change in the final column of this table.

(2) Fill in net emissions/removals as reported in table Summary 1.A. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(3) In accordance with the UNFCCC reporting guidelines, for Parties that decide to report indirect CO2 the national totals shall be provided with and without indirect CO_2.

(4) In accordance with the UNFCCC reporting guidelines, HFC and PFC emissions should be reported for each relevant chemical. However, if it is not possible to report values for each chemical (i.e. mixtures, confidential data, lack of disaggregation), this row could be used for reporting aggregate figures for HFCs and PFCs, respectively. Note that the unit used for this row is kt of CO_2 equivalent and that appropriate notation keys should be entered in the cells for the individual chemicals.

(5) Includes net CO_2, CH_4 and N_2O from LULUCF.

Documentation box:

• Parties should provide detailed explanations on emissions trends in chapter 2: Trends in Greenhouse Gas Emissions and, as appropriate, in the corresponding Chapters 3 - 8 of the national inventory report (NIR). Use this documentation box to provide references to relevant sections of the NIR if any additional information and further details are needed to understand the content of this table.

• Use the documentation box to provide explanations if potential emissions are reported.

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year[1]	1990	1991	1992	1993	1994	1995	1996	1997	1998
	(kt)									
1. Energy	4.41	4.41	4.39	4.51	4.91	4.80	5.10	5.43	5.45	5.35
A. Fuel combustion (sectoral approach)	4.41	4.41	4.39	4.51	4.91	4.80	5.10	5.43	5.45	5.34
1. Energy industries	0.35	0.35	0.37	0.43	0.42	0.50	0.49	0.53	0.59	0.64
2. Manufacturing industries and construction	0.49	0.49	0.52	0.49	0.48	0.44	0.49	0.63	0.68	0.70
3. Transport	2.06	2.06	1.98	2.07	2.50	2.42	2.65	2.82	2.70	2.58
4. Other sectors	1.50	1.50	1.51	1.52	1.51	1.44	1.47	1.46	1.48	1.42
5. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
B. Fugitive emissions from fuels	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1. Solid fuels	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO
2. Oil and natural gas and other emissions from energy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C. CO_2 transport and storage										
2. Industrial processes	2.33	2.33	1.84	2.09	1.91	1.35	2.26	2.31	2.45	2.32
A. Mineral industry										
B. Chemical industry	2.33	2.33	1.84	2.09	1.91	1.35	2.26	2.31	2.45	2.32
C. Metal industry										
D. Non-energy products from fuels and solvent use	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE
E. Electronic industry										
F. Product uses as ODS substitutes										
G. Other product manufacture and use	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
H. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3. Agriculture	45.66	45.66	44.90	46.80	50.14	42.09	42.23	45.10	45.56	51.89
A. Enteric fermentation										
B. Manure management	6.72	6.72	7.36	7.46	7.61	7.57	7.13	7.31	7.09	7.53
C. Rice cultivation										
D. Agricultural soils	38.68	38.68	37.28	39.10	42.26	34.28	34.86	37.54	38.21	44.07
E. Prescribed burning of savannas	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
F. Field burning of agricultural residues	0.26	0.26	0.27	0.25	0.27	0.24	0.24	0.25	0.25	0.28
G. Liming										
H. Urea application										
I. Other carbon containing fertilizers										
J. Other										

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year(1)	1990	1991	1992	1993	1994	1995	1996	1997	1998
	(kt)									
4. Land use, land-use change and forestry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Forest land	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B. Cropland	NO,NE	NO,NE	NO,NE	NO,NE	NO,NE	NO,NE	NO,NE	NO,NE	NO,NE	NO,NE
C. Grassland	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
D. Wetlands	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
E. Settlements	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
F. Other land	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
G. Harvested wood products										
H. Other										
5. Waste	4.54	4.54	4.61	4.69	4.77	4.84	4.90	4.98	5.07	5.12
A. Solid waste disposal										
B. Biological treatment of solid waste	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05
C. Incineration and open burning of waste	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.03
D. Waste water treatment and discharge	4.44	4.44	4.52	4.60	4.67	4.74	4.82	4.89	4.97	5.04
E. Other										
6. Other *(as specified in summary 1.A)*										
Total direct N_2O emissions without N_2O from LULUCF	56.95	56.95	55.75	58.09	61.72	53.08	54.49	57.83	58.54	64.67
Total direct N_2O emissions with N_2O from LULUCF	56.95	56.95	55.75	58.09	61.72	53.08	54.49	57.83	58.54	64.67
Memo items:										
International bunkers	0.03	0.03	0.03	0.03	0.04	0.03	0.04	0.04	0.05	0.06
Aviation	0.02	0.02	0.02	0.02	0.03	0.02	0.02	0.03	0.04	0.04
Navigation	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01
Multilateral operations	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CO_2 emissions from biomass										
CO_2 captured										
Long-term storage of C in waste disposal sites										
Indirect N_2O	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Indirect CO_2 (3)										

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	1999	2000	2001	2002	2003	2004	2005	2006	2007
	(kt)								
1. Energy	5.24	5.34	4.91	4.98	5.07	5.25	5.36	5.67	5.98
A. Fuel combustion (sectoral approach)	5.23	5.34	4.91	4.98	5.06	5.24	5.36	5.67	5.98
1. Energy industries	0.65	0.69	0.69	0.58	0.56	0.58	0.73	0.80	0.96
2. Manufacturing industries and construction	0.62	0.84	0.64	0.79	0.88	0.89	0.87	1.00	1.05
3. Transport	2.62	2.50	2.36	2.40	2.43	2.59	2.60	2.73	2.85
4. Other sectors	1.35	1.32	1.23	1.21	1.19	1.18	1.16	1.13	1.12
5. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO
B. Fugitive emissions from fuels	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1. Solid fuels	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO
2. Oil and natural gas and other emissions from energy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C. CO_2 transport and storage									
2. Industrial processes	2.27	2.04	1.65	1.92	1.80	1.90	2.45	3.14	3.62
A. Mineral industry									
B. Chemical industry	2.27	2.04	1.65	1.92	1.80	1.90	2.45	3.14	3.62
C. Metal industry									
D. Non-energy products from fuels and solvent use	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE
E. Electronic industry									
F. Product uses as ODS substitutes									
G. Other product manufacture and use	NE	NE	NE	NE	NE	NE	NE	NE	NE
H. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA
3. Agriculture	52.60	51.10	44.13	46.86	49.09	51.81	52.54	53.45	50.87
A. Enteric fermentation									
B. Manure management	7.46	7.50	7.12	7.24	7.09	8.15	8.58	8.96	8.44
C. Rice cultivation									
D. Agricultural soils	44.90	43.33	36.76	39.36	41.74	43.37	43.67	44.21	42.19
E. Prescribed burning of savannas	NO	NO	NO	NO	NO	NO	NO	NO	NO
F. Field burning of agricultural residues	0.25	0.27	0.25	0.26	0.26	0.28	0.29	0.28	0.24
G. Liming									
H. Urea application									
I. Other carbon containing fertilizers									
J. Other									

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	1999	2000	2001	2002	2003	2004	2005	2006	2007
	(kt)								
4. Land use, land-use change and forestry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Forest land	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B. Cropland	NO,NE	NO,NE	NO,NE	NO,NE	NO,NE	NO,NE	NO,NE	NO,NE	NO,NE
C. Grassland	NE	NE	NE	NE	NE	NE	NE	NE	NE
D. Wetlands	NE	NE	NE	NE	NE	NE	NE	NE	NE
E. Settlements	NE	NE	NE	NE	NE	NE	NE	NE	NE
F. Other land	NE	NE	NE	NE	NE	NE	NE	NE	NE
G. Harvested wood products									
H. Other									
5. Waste	5.21	5.28	5.35	5.46	5.51	5.57	5.64	5.69	5.78
A. Solid waste disposal									
B. Biological treatment of solid waste	0.07	0.07	0.07	0.11	0.10	0.11	0.10	0.08	0.10
C. Incineration and open burning of waste	0.03	0.03	0.03	0.02	0.02	0.01	0.02	0.02	0.02
D. Waste water treatment and discharge	5.11	5.18	5.26	5.32	5.39	5.45	5.52	5.59	5.66
E. Other									
6. Other *(as specified in summary 1.A)*									
Total direct N_2O emissions without N_2O from LULUCF	65.32	63.77	56.04	59.22	61.47	64.52	65.99	67.96	66.25
Total direct N_2O emissions with N_2O from LULUCF	65.32	63.77	56.04	59.22	61.47	64.52	65.99	67.96	66.25
Memo items:									
International bunkers	0.07	0.08	0.06	0.12	0.13	0.17	0.18	0.17	0.17
Aviation	0.04	0.04	0.04	0.07	0.08	0.08	0.09	0.08	0.10
Navigation	0.02	0.03	0.02	0.04	0.05	0.08	0.09	0.08	0.06
Multilateral operations	NO	NO	NO	NO	NO	NO	NO	NO	NO
CO_2 emissions from biomass									
CO_2 captured									
Long-term storage of C in waste disposal sites									
Indirect N_2O	NE	NE	NE	NE	NE	NE	NE	NE	NE
Indirect CO_2 (3)									

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2008	2009	2010	2011	2012	2013	Change from base to latest reported year
	(kt)						%
1. Energy	5.67	5.51	5.49	5.33	6.02	6.52	47.76
A. Fuel combustion (sectoral approach)	5.66	5.51	5.49	5.32	6.01	6.51	47.81
1. Energy industries	1.02	0.91	0.90	0.94	1.10	1.01	185.10
2. Manufacturing industries and construction	0.65	0.62	0.77	0.70	0.72	0.78	58.62
3. Transport	2.63	2.55	2.43	2.50	3.22	3.57	73.06
4. Other sectors	1.36	1.42	1.39	1.19	0.97	1.16	-22.91
5. Other	NO	NO	NO	NO	NO	NO	
B. Fugitive emissions from fuels	0.00	0.00	0.00	0.00	0.00	0.00	-35.65
1. Solid fuels	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	
2. Oil and natural gas and other emissions from energy production	0.00	0.00	0.00	0.00	0.00	0.00	-35.65
C. CO_2 transport and storage							
2. Industrial processes	2.76	2.48	2.90	3.29	3.30	3.37	44.14
A. Mineral industry							
B. Chemical industry	2.76	2.48	2.90	3.29	3.30	3.37	44.14
C. Metal industry							
D. Non-energy products from fuels and solvent use	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	
E. Electronic industry							
F. Product uses as ODS substitutes							
G. Other product manufacture and use	NE	NE	NE	NE	NE	NE	
H. Other	NA	NA	NA	NA	NA	NA	
3. Agriculture	45.88	52.11	51.01	50.61	55.19	61.87	35.49
A. Enteric fermentation							
B. Manure management	8.19	7.91	8.40	9.04	10.02	10.51	56.37
C. Rice cultivation							
D. Agricultural soils	37.45	43.93	42.35	41.30	44.91	51.07	32.02
E. Prescribed burning of savannas	NO	NO	NO	NO	NO	NO	
F. Field burning of agricultural residues	0.24	0.27	0.26	0.28	0.26	0.29	12.54
G. Liming							
H. Urea application							
I. Other carbon containing fertilizers							
J. Other							

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2008	2009	2010	2011	2012	2013	Change from base to latest reported year
	(kt)						%
4. Land use, land-use change and forestry	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Forest land	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B. Cropland	NO,NE	NO,NE	NO,NE	NO,NE	NO,NE	NO,NE	
C. Grassland	NE	NE	NE	NE	NE	NE	
D. Wetlands	NE	NE	NE	NE	NE	NE	
E. Settlements	NE	NE	NE	NE	NE	NE	
F. Other land	NE	NE	NE	NE	NE	NE	
G. Harvested wood products							
H. Other							
5. Waste	5.84	5.92	5.97	6.08	6.12	6.19	36.33
A. Solid waste disposal							
B. Biological treatment of solid waste	0.08	0.09	0.06	0.09	0.05	0.05	-16.70
C. Incineration and open burning of waste	0.02	0.02	0.01	0.01	0.01	0.01	-82.49
D. Waste water treatment and discharge	5.73	5.81	5.90	5.99	6.06	6.13	37.98
E. Other							
6. Other *(as specified in summary 1.A)*							
Total direct N_2O emissions without N_2O from LULUCF	60.15	66.02	65.36	65.31	70.62	77.94	36.86
Total direct N_2O emissions with N_2O from LULUCF	60.15	66.02	65.36	65.31	70.62	77.94	36.86
Memo items:							
International bunkers	0.20	0.22	0.23	0.24	0.28	0.32	1,142.47
Aviation	0.14	0.15	0.16	0.19	0.21	0.24	1,469.54
Navigation	0.06	0.07	0.06	0.05	0.07	0.07	641.13
Multilateral operations	NO	NO	NO	NO	NO	NO	
CO_2 emissions from biomass							
CO_2 captured							
Long-term storage of C in waste disposal sites							
Indirect N_2O	NE	NE	NE	NE	NE	NE	
Indirect CO_2 (3)							

Documentation box

(1) The column "Base year" should be filled in only by those Parties with economies in transition that use a base year different from 1990 in accordance with the relevant decisions of the COP. For these Parties, this different base year is used to calculate the percentage change in the final column of this table.

(2) Fill in net emissions/removals as reported in table Summary 1.A. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(3) In accordance with the UNFCCC reporting guidelines, for Parties that decide to report indirect CO2 the national totals shall be provided with and without indirect CO_2.

(4) In accordance with the UNFCCC reporting guidelines, HFC and PFC emissions should be reported for each relevant chemical. However, if it is not possible to report values for each chemical (i.e. mixtures, confidential data, lack of disaggregation), this row could be used for reporting aggregate figures for HFCs and PFCs, respectively. Note that the unit used for this row is kt of CO_2 equivalent and that appropriate notation keys should be entered in the cells for the individual chemicals.

(5) Includes net CO_2, CH_4 and N_2O from LULUCF.

Documentation box:

• Parties should provide detailed explanations on emissions trends in chapter 2: Trends in Greenhouse Gas Emissions and, as appropriate, in the corresponding Chapters 3 - 8 of the national inventory report (NIR). Use this documentation box to provide references to relevant sections of the NIR if any additional information and further details are needed to understand the content of this table.

• Use the documentation box to provide explanations if potential emissions are reported.

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year(1)	1990	1991	1992	1993	1994	1995	1996	1997	1998
	(kt)									
Emissions of HFCs and PFCs - (kt CO_2 equivalent)	603.43	603.43	744.35	681.09	685.15	604.21	516.43	520.26	516.82	517.29
Emissions of HFCs - (kt CO_2 equivalent)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
HFC-23										
HFC-32										
HFC-41										
HFC-43-10mee										
HFC-125										
HFC-134										
HFC-134a	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
HFC-143										
HFC-143a										
HFC-152										
HFC-152a										
HFC-161										
HFC-227ea										
HFC-236cb										
HFC-236ea										
HFC-236fa										
HFC-245ca										
HFC-245fa										
HFC-365mfc										
Unspecified mix of HFCs(4) - (kt CO_2 equivalent)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Emissions of PFCs - (kt CO_2 equivalent)	603.43	603.43	744.35	681.09	685.15	604.21	516.43	520.26	516.82	517.29
CF_4										
C_2F_6										
C_3F_8										
C_4F_{10}										

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year(1)	1990	1991	1992	1993	1994	1995	1996	1997	1998
	(kt)									
c-C_4F_8										
C_5F_{12}										
C_6F_{14}										
$C_{10}F_{18}$										
c-C_3F_6										
Unspecified mix of PFCs(4) - (kt CO_2 equivalent)	603.43	603.43	744.35	681.09	685.15	604.21	516.43	520.26	516.82	517.29
Unspecified mix of HFCs and PFCs - (kt CO_2 equivalent)										
Emissions of SF_6 - (kt CO_2 equivalent)	NE	NE	NE	NE	NE	NE	NE	356.64	582.97	629.28
SF_6	NE	NE	NE	NE	NE	NE	NE	0.02	0.03	0.03
Emissions of NF_3 - (kt CO_2 equivalent)										
NF_3										

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	1999	2000	2001	2002	2003	2004	2005	2006	2007
					(kt)				
Emissions of HFCs and PFCs - (kt CO_2 equivalent)	514.85	1,415.39	1,474.47	2,079.91	2,505.95	2,974.91	3,104.66	3,407.34	3,612.32
Emissions of HFCs - (kt CO_2 equivalent)	NO	900.27	958.63	1,560.83	1,987.39	2,451.61	2,616.90	3,002.72	3,612.32
HFC-23									
HFC-32									
HFC-41									
HFC-43-10mee									
HFC-125									
HFC-134									
HFC-134a	NO	0.63	0.67	1.09	1.39	1.71	1.83	2.10	2.44
HFC-143									
HFC-143a									
HFC-152									
HFC-152a									
HFC-161									
HFC-227ea									
HFC-236cb									
HFC-236ea									
HFC-236fa									
HFC-245ca									
HFC-245fa									
HFC-365mfc									
Unspecified mix of HFCs[4] - (kt CO_2 equivalent)	NO	NE	NE	NE	NE	NE	NE	NE	120.60
Emissions of PFCs - (kt CO_2 equivalent)	514.85	515.12	515.84	519.08	518.56	523.31	487.76	404.62	NE
CF_4									
C_2F_6									
C_3F_8									
C_4F_{10}									

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	1999	2000	2001	2002	2003	2004	2005	2006	2007
	(kt)								
$c\text{-}C_4F_8$									
C_5F_{12}									
C_6F_{14}									
$C_{10}F_{18}$									
$c\text{-}C_3F_6$									
Unspecified mix of PFCs[4] - (kt CO_2 equivalent)	514.85	515.12	515.84	519.08	518.56	523.31	487.76	404.62	NE
Unspecified mix of HFCs and PFCs - (kt CO_2 equivalent)									
Emissions of SF_6 - (kt CO_2 equivalent)	493.03	308.03	294.26	454.81	457.37	672.14	819.20	869.18	908.29
SF_6	0.02	0.01	0.01	0.02	0.02	0.03	0.04	0.04	0.04
Emissions of NF_3 - (kt CO_2 equivalent)									
NF_3									

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2008	2009	2010	2011	2012	2013	Change from base to latest reported year
	(kt)						%
Emissions of HFCs and PFCs - (kt CO_2 equivalent)	3,180.26	3,459.50	4,882.28	5,230.55	6,305.04	5,705.87	845.57
Emissions of HFCs - (kt CO_2 equivalent)	3,180.26	3,459.50	4,882.28	5,230.55	6,305.04	5,705.87	
HFC-23							
HFC-32							
HFC-41							
HFC-43-10mee							
HFC-125							
HFC-134							
HFC-134a	2.05	2.18	3.08	3.14	3.60	3.29	
HFC-143							
HFC-143a							
HFC-152							
HFC-152a							
HFC-161							
HFC-227ea							
HFC-236cb							
HFC-236ea							
HFC-236fa							
HFC-245ca							
HFC-245fa							
HFC-365mfc							
Unspecified mix of HFCs[4] - (kt CO_2 equivalent)	243.88	336.33	472.05	738.92	1,155.61	1,007.13	
Emissions of PFCs - (kt CO_2 equivalent)	NE	NE	NE	NE	NE	NE	
CF_4							
C_2F_6							
C_3F_8							
C_4F_{10}							

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2008	2009	2010	2011	2012	2013	Change from base to latest reported year
	(kt)						%
c-C_4F_8							
C_5F_{12}							
C_6F_{14}							
$C_{10}F_{18}$							
c-C_3F_6							
Unspecified mix of PFCs[4] - (kt CO_2 equivalent)	NE	NE	NE	NE	NE	NE	
Unspecified mix of HFCs and PFCs - (kt CO_2 equivalent)							
Emissions of SF_6 - (kt CO_2 equivalent)	804.29	766.49	835.48	906.49	926.43	963.49	
SF_6	0.04	0.03	0.04	0.04	0.04	0.04	
Emissions of NF_3 - (kt CO_2 equivalent)							
NF_3							

Documentation box

(1) The column "Base year" should be filled in only by those Parties with economies in transition that use a base year different from 1990 in accordance with the relevant decisions of the COP. For these Parties, this different base year is used to calculate the percentage change in the final column of this table.

(2) Fill in net emissions/removals as reported in table Summary 1.A. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(3) In accordance with the UNFCCC reporting guidelines, for Parties that decide to report indirect CO2 the national totals shall be provided with and without indirect CO_2.

(4) In accordance with the UNFCCC reporting guidelines, HFC and PFC emissions should be reported for each relevant chemical. However, if it is not possible to report values for each chemical (i.e. mixtures, confidential data, lack of disaggregation), this row could be used for reporting aggregate figures for HFCs and PFCs, respectively. Note that the unit used for this row is kt of CO_2 equivalent and that appropriate notation keys should be entered in the cells for the individual chemicals.

(5) Includes net CO_2, CH_4 and N_2O from LULUCF.

Documentation box:

• Parties should provide detailed explanations on emissions trends in chapter 2: Trends in Greenhouse Gas Emissions and, as appropriate, in the corresponding Chapters 3 - 8 of the national inventory report (NIR). Use this documentation box to provide references to relevant sections of the NIR if any additional information and further details are needed to understand the content of this table.

• Use the documentation box to provide explanations if potential emissions are reported.

Chapter III: Quantified Economy-Wide Emission Reduction Target

The most important step to address the impact of global warming caused by human activities on climate change was the conclusion of the UNFCCC, which was opened for signature at the United Nations Environment and Development Conference, convened in 1992 in Rio de Janeiro. The Convention entered into force on March 21, 1994. More than 190 countries including Turkey and the European Union (EU) member countries are party to the Convention.

Parties to the Convention are required to reduce GHG emissions, to cooperate on research and technology and to encourage protection of sinks. The Convention lays “common but differentiated responsibilities” to countries, taking into account their respective development priorities, goals and special circumstances, in order to reduce greenhouse gases emissions. “Common but differentiated responsibilities” principle rests on the fact that some countries need to take more responsibility in reducing GHG emissions, since they have been emitting more GHG than others after the industrial revolution.

When the Convention was adopted in 1992, Turkey, as an OECD member, was included among the Annex I and Annex II countries which bear most of the burden of the commitments made under the agreement. However, Turkey did not engage actively in Convention implementation until 2001, following negotiations which resulted in UNFCCC parties agreeing that Turkey’s “special circumstances” should be recognized and that it could invoke the “common but differentiated responsibilities” principle under the Convention. As a result of decision 26/CP.7 of the UNFCCC adopted in 7th Conference of Parties held in Marrakech in 2001, Turkey was removed from Annex II of the UNFCCC and State Parties were invited to recognize the special conditions which place Turkey in a different position from other Annex I countries. This decision entered into force on June 28, 2002 and since that date Turkey is only an Annex I country. After this decision was taken, Turkey was able to adhere to the Convention ten years after its entry into force on May 24, 2004.

GHG reduction commitments for the Parties, included in Annex I of the Convention, during the first commitment period ranging from 2008 to 2012 are determined in the Annex B of the Kyoto Protocol. Turkey was not Party to the Convention, during the negotiations of the Kyoto Protocol, and therefore, is not listed in the Annex-B of the Kyoto Protocol, although being listed in the Annex-I of the Convention.

Turkey became a Party to the Kyoto Protocol on 26 August 2009. Since it is not listed in the Annex-B of the Protocol, Turkey does not have any quantified emission reduction target. Turkey’s responsibility under the Protocol until 2012 is only limited to the Article 10 of the Protocol.

The first commitment period of the Kyoto Protocol ended in 2012. Official negotiations of the post Kyoto regime under the UNFCCC have begun at the 13th Conference of Parties to the UNFCCC in December 2007 in Bali. As successor of the Kyoto Protocol, the "Doha Amendment to the Kyoto Protocol" has been adopted at the Doha Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol on 8 December 2012. This amendment is not in effect which has also not been ratified by Republic of Turkey.

In that respect Turkey as an Annex-I and non-Annex B country, has no quantified emission reduction target within the reporting period of the Joint First and Second Biennial Report or in any foreseeable future. Regarding the reporting in Biennial Report (BR), the BR Table 2 on description of quantified economy-wide emission reduction target is inapplicable for the case of Turkey thus is left blank throughout the report.

TABLE 2(A)[3]
DESCRIPTION OF QUANTIFIED ECONOMY-WIDE EMISSION REDUCTION TARGET: BASE YEAR [a]

		Comments
Base year/ base period		
Emission reductions target (% of base year/base period)		
Emission reductions target (% of 1990)[b]		
Period for reaching target		

a Reporting by a developed country Party on the information specified in the common tabular format does not prejudge the position of other Parties with regard to the treatment of units from market-based mechanisms under the Convention or other market-based mechanisms towards achievement of quantified economy-wide emission reduction targets.
b Optional.

[3] Turkey as a non-Annex B country, has no quantified emission reduction target within the reporting period of the Joint First and Second Biennial Report (BR) or in any foreseeable future. Therefore, the Table 2(A) is inapplicable for the case of Turkey and is left blank.

TABLE 2(B)[4]
DESCRIPTION OF QUANTIFIED ECONOMY-WIDE EMISSION REDUCTION TARGET: GASES AND SECTORS COVERED[a]

Gases covered	Covered	Base Year	Comments
CO_2			
CH_4			
N_2O			
HFCs			
PFCs			
SF_6			
NF_3			
Other Gases (Specify)			

Sectors covered[b]	Covered	Comments
Energy		
Transport[c]		
Industrial processes[d]		
Agriculture		
LULUCF		
Waste		
Other (Specify)		

Abbreviations: LULUCF = land use, land-use change and forestry.
a Reporting by a developed country Party on the information specified in the common tabular format does not prejudge the position of other Parties with regard to the treatment of units from market-based mechanisms under the Convention or other market-based mechanisms towards achievement of quantified economy-wide emission reduction targets.
b More than one selection will be allowed. If Parties use sectors other than those indicated above, the explanation of how these sectors relate to the sectors defined by the IPCC should be provided.
c Transport is reported as a subsector of the energy sector.
d Industrial processes refer to the industrial processes and solvent and other product use sectors.

[4] Turkey as a non-Annex B country, has no quantified emission reduction target within the reporting period of the Joint First and Second Biennial Report (BR) or in any foreseeable future. Therefore, the Table 2(B) is inapplicable for the case of Turkey and is left blank.

TABLE 2(C)[5]
DESCRIPTION OF QUANTIFIED ECONOMY-WIDE EMISSION REDUCTION TARGET: GLOBAL WARMING POTENTIAL VALUES (GWP)[a]

Gases covered	Covered	GWP Values[b]	Comments
CO_2			
CH_4			
N_2O			
HFCs			
PFCs			
SF_6			
NF_3			
Other Gases (Specify)			

Abbreviations: GWP = global warming potential
a Reporting by a developed country Party on the information specified in the common tabular format does not prejudge the position of other Parties with regard to the treatment of units from market-based mechanisms under the Convention or other market-based mechanisms towards achievement of quantified economy-wide emission reduction targets.
b Please specify the reference for the GWP: Second Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) or the Fourth Assessment Report of the IPCC.
c Specify.

[5] Turkey as a non-Annex B country, has no quantified emission reduction target within the reporting period of the Joint First and Second Biennial Report (BR) or in any foreseeable future. Therefore, the Table 2(C) is inapplicable for the case of Turkey and is left blank.

TABLE 2 (D)[6]
DESCRIPTION OF QUANTIFIED ECONOMY-WIDE EMISSION REDUCTION TARGET: APPROACH TO COUNTING EMISSIONS AND REMOVALS FROM THE LULUCF SECTOR[a]

Role of LULUCF Sector		Comments
LULUCF in base year level and target	Included Excluded	
Contribution of LULUCF is calculated using	Land-based approach Activity-based approach Other (Specify)	

Abbreviation: LULUCF = land use, land-use change and forestry.
a Reporting by a developed country Party on the information specified in the common tabular format does not prejudge the position of other Parties with regard to the treatment of units from market-based mechanisms under the Convention or other market-based mechanisms towards achievement of quantified economy-wide emission reduction targets

[6] Turkey as a non-Annex B country, has no quantified emission reduction target within the reporting period of the Joint First and Second Biennial Report (BR) or in any foreseeable future. Therefore, the Table 2(D) is inapplicable for the case of Turkey and is left blank.

TABLE 2 (E)-I[7]
DESCRIPTION OF QUANTIFIED ECONOMY-WIDE EMISSION REDUCTION TARGET: MARKET-BASED MECAHNISMS UNDER THE CONVENTION[a]

		Comments
Possible scale of contributions of market-based mechanisms under the Convention (estimated kt CO_2 eq)		
CERs		
ERUs		
AAUs[b]		
Carry-over units[c]		
Other mechanism units under the Convention (Specify)[d]		

Abbreviations: AAU = assigned amount unit, CER = certified emission reduction, ERU = emission reduction unit.
a Reporting by a developed country Party on the information specified in the common tabular format does not prejudge the position of other Parties with regard to the treatment of units from market-based mechanisms under the Convention or other market-based mechanisms towards achievement of quantified economy-wide emission reduction targets.
b AAUs issued to or purchased by a Party.
c Units carried over from the first to the second commitment periods of the Kyoto Protocol, as described in decision 13/CMP.1 and consistent with decision XX /CMP.8.
d As indicated in paragraph 5(e) of the guidelines contained in annex I of decision 2/CP.17.

[7] Turkey as a non-Annex B country, has no quantified emission reduction target within the reporting period of the Joint First and Second Biennial Report (BR) or in any foreseeable future. Therefore, the Table 2(E)I is inapplicable for the case of Turkey and is left blank.

TABLE 2 (E)-II[8]
DESCRIPTION OF QUANTIFIED ECONOMY-WIDE EMISSION REDUCTION TARGET: OTHER MARKET-BASED MECHANISM[a]

		Comments
Possible scale of contributions of other market-based mechanisms (Specify) (estimated kt CO_2 eq)		

a Reporting by a developed country Party on the information specified in the common tabular format does not prejudge the position of other Parties with regard to the treatment of units from market-based mechanisms under the Convention or other market-based mechanisms towards achievement of quantified economy-wide emission reduction targets.

[8] Turkey as a non-Annex B country, has no quantified emission reduction target within the reporting period of the Joint First and Second Biennial Report (BR) or in any foreseeable future. Therefore, the Table 2(E)II is inapplicable for the case of Turkey and is left blank.

TABLE 2 (F)[9]
DESCRIPTION OF QUANTIFIED ECONOMY-WIDE EMISSION REDUCTION TARGET: ANY OTHER INFORMATION[a,b]

Any other information	

a Reporting by a developed country Party on the information specified in the common tabular format does not prejudge the position of other Parties with regard to the treatment of units from market-based mechanisms under the Convention or other market-based mechanisms towards achievement of quantified economy-wide emission reduction targets.
b This information could include information on the domestic legal status of the target or the total assigned amount of emission units for the period for reaching a target. Some of this information is presented in the narrative part of the biennial report.

[9] Turkey as a non-Annex B country, has no quantified emission reduction target within the reporting period of the Joint First and Second Biennial Report (BR) or in any foreseeable future. Therefore, the Table 2(F) is inapplicable for the case of Turkey and is left blank.

Chapter IV: Progress in Achievement of the Quantified Economy-Wide Emission Reduction Target

The most important step to address the impact of global warming caused by human activities on climate change was the conclusion of the UNFCCC, which was opened for signature at the United Nations Environment and Development Conference, convened in 1992 in Rio de Janeiro. The Convention entered into force on March 21, 1994. More than 190 countries including Turkey and the EU member countries are party to the Convention.

Parties to the Convention are required to reduce GHG emissions, to cooperate on research and technology and to encourage protection of sinks. The Convention lays “common but differentiated responsibilities” to countries, taking into account their respective development priorities, goals and special circumstances, in order to reduce greenhouse gases emissions. “Common but differentiated responsibilities” principle rests on the fact that some countries need to take more responsibility in reducing GHG emissions, since they have been emitting more GHG than others after the industrial revolution.

When the Convention was adopted in 1992, Turkey, as an OECD member, was included among the Annex I and Annex II countries which bear most of the burden of the commitments made under the agreement. However, Turkey did not engage actively in Convention implementation until 2001, following negotiations which resulted in UNFCCC parties agreeing that Turkey’s “special circumstances” should be recognized and that it could invoke the “common but differentiated responsibilities” principle under the Convention. As a result of decision 26/CP.7 of the UNFCCC adopted in 7th Conference of Parties held in Marrakech in 2001, Turkey was removed from Annex II of the UNFCCC and State Parties were invited to recognize the special conditions which place Turkey in a different position from other Annex I countries. This decision entered into force on June 28, 2002 and since that date Turkey is only an Annex I country. After this decision was taken, Turkey was able to adhere to the Convention ten years after its entry into force on May 24, 2004.

GHG reduction commitments for the Parties, included in Annex I of the Convention, during the first commitment period ranging from 2008 to 2012 are determined in the Annex B of the Kyoto Protocol. Turkey was not Party to the Convention, during the negotiations of the Kyoto Protocol, and therefore, is not listed in the Annex-B of the Kyoto Protocol, although being listed in the Annex-I of the Convention.

Turkey became a Party to the Kyoto Protocol on 26 August 2009. Since it is not listed in the Annex-B of the Protocol, Turkey does not have any quantified emission reduction target. Turkey’s responsibility under the Protocol until 2012 is only limited to the Article 10 of the Protocol.

The first commitment period of the Kyoto Protocol ended in 2012. Official negotiations of the post Kyoto regime under the UNFCCC have begun at the 13th Conference of Parties to the UNFCCC in December 2007 in Bali. As successor of the Kyoto Protocol, the "Doha Amendment to the Kyoto Protocol" has been adopted at the Doha Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol on 8 December 2012. This amendment is not in effect which has also not been ratified by Republic of Turkey.

In that respect Turkey as an Annex-I and non-Annex B country, has no quantified emission reduction target within the reporting period of the Joint First and Second Biennial Report or in any foreseeable future. Regarding the reporting in Biennial Report, the BR Table 3 on progress in achievement of the quantified economy-wide emission reduction target and BR Table 4 on progress in achievement of the quantified economy-wide emission reduction target, are inapplicable for the case of Turkey thus are left blank throughout the report.

TABLE 3[10]
PROGRESS IN ACHIEVEMENT OF THE QUANTIFIED ECONOMY-WIDE EMISSION REDUCTION TARGET: INFORMATION ON MITIGATION ACTIONS AND THEIR EFFECTS

Name of mitigation action[a]	Sector(s) affected	GHG(s) affected	Objective and/or activity affected	Type of instrument[c]	Status of implementation[d]	Brief description[e]	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative) (kt CO_2 eq)		Comment
									20XX[f]	2020	

Note: The two final columns specify the year identified by the Party for estimating impacts (based on the status of the measure and whether an ex post or ex ante estimation is available).
Abbreviations: GHG = greenhouse gas; LULUCF = land use, land-use change and forestry.
a Parties should use an asterisk (*) to indicate that a mitigation action is included in the 'with measures' projection.
b To the extent possible, the following sectors should be used: energy, transport, industry/industrial processes, agriculture, forestry/LULUCF, waste management/waste, other sectors, cross-cutting, as appropriate.
c To the extent possible, the following types of instrument should be used: economic, fiscal, voluntary agreement, regulatory, information, education, research, other.
d To the extent possible, the following descriptive terms should be used to report on the status of implementation: implemented, adopted, planned.
e Additional information may be provided on the cost of the mitigation actions and the relevant timescale.
f Optional year or years deemed relevant by the Party.

[10] Turkey as a non-Annex B country, has no quantified emission reduction target within the reporting period of the Joint First and Second Biennial Report (BR) or in any foreseeable future. Therefore, the Table 3 is inapplicable for the case of Turkey and is left blank.

TABLE 4[11]
REPORTING ON PROGRESS[a,b]

		Year[c]						
	Unit	Base Year	2010	2011	2012	2013	2014	Comment
Total emissions (without LULUCF)	kt CO_2 eq							
Contribution from LULUCFd	kt CO_2 eq							
Quantity of units from market-based mechanisms under the Convention	number of units							
	kt CO_2 eq							
Quantity of units from other market-based mechanisms	number of units							
	kt CO_2 eq							

Abbreviation: GHG = greenhouse gas, LULUCF = land use, land-use change and forestry.
a Reporting by a developed country Party on the information specified in the common tabular format does not prejudge the position of other Parties with regard to the treatment of units from market-based mechanisms under the Convention or other market-based mechanisms towards achievement of quantified economy-wide emission reduction targets.
b For the base year, information reported on the emission reduction target shall include the following: (a) total GHG emissions, excluding emissions and removals from the LULUCF sector; (b) emissions and/or removals from the LULUCF sector based on the accounting approach applied taking into consideration any relevant decisions of the Conference of the Parties and the activities and/or land that will be accounted for; (c) total GHG emissions, including emissions and removals from the LULUCF sector. For each reported year, information reported on progress made towards the emission reduction targets shall include, in addition to the information noted in paragraphs 9(a–c) of the UNFCCC biennial reporting guidelines for developed country Parties, information on the use of units from market-based mechanisms.
c Parties may add additional rows for years other than those specified below.
d Information in this column should be consistent with the information reported in table 4(a)I or 4(a)II, as appropriate. The Parties for which all relevant information on the LULUCF contribution is reported in table 1 of this common tabular format can refer to table 1.

[11] Turkey as a non-Annex B country, has no quantified emission reduction target within the reporting period of the Joint First and Second Biennial Report (BR) or in any foreseeable future. Therefore, the Table 4 is inapplicable for the case of Turkey and is left blank.

TABLE 4(A)-I[12]
PROGRESS IN ACHIEVING THE QUANTIFIED ECONOMY-WIDE EMISSION REDUCTION TARGETS –FURTHER INFORMATION ON MITIGATION ACTIONS RELEVANT TO THE CONTRIBUTION OF THE LAND USE, LAND-USE CHANGE AND FORESTRY SECTOR IN 20XX-3[a,b]

	Unit	Net GHG emissions/removals from LULUCF categories[c]	Base year/period or reference level value[d]	Contribution from LULUCF for reported year	Cumulative contribution from LULUCF[e]	Accounting approach[f]	Reference to the BR for additional information on the approach	Comments
Year								
Total LULUCF	kt CO_2 eq							
A. Forest land	kt CO_2 eq							
1. Forest land remaining forest land	kt CO_2 eq							
2. Land converted to forest land	kt CO_2 eq							
3. Other (please specify)[g]	kt CO_2 eq							
B. Cropland	kt CO_2 eq							
1. Cropland remaining cropland	kt CO_2 eq							
2. Land converted to cropland	kt CO_2 eq							
3. Other (please specify)[g]	kt CO_2 eq							
C. Grassland	kt CO_2 eq							
1. Grassland remaining grassland	kt CO_2 eq							
2. Land converted to grassland	kt CO_2 eq							
3. Other (please specify)[g]	kt CO_2 eq							
D. Wetlands	kt CO_2 eq							
1. Wetland remaining wetland	kt CO_2 eq							
2. Land converted to wetland	kt CO_2 eq							
3. Other (please specify)[g]	kt CO_2 eq							
E. Settlements	kt CO_2 eq							
1. Settlements remaining settlements	kt CO_2 eq							
2. Land converted to settlements	kt CO_2 eq							
3. Other (please specify)[g]	kt CO_2 eq							
F. Other land	kt CO_2 eq							
1. Other land remaining other land	kt CO_2 eq							
2. Land converted to other land	kt CO_2 eq							
3. Other (please specify)[g]	kt CO_2 eq							

[12] Turkey as a non-Annex B country, has no quantified emission reduction target within the reporting period of the Joint First and Second Biennial Report (BR) or in any foreseeable future. Therefore, the Table 4(A)I is inapplicable for the case of Turkey and is left blank.

Harvested wood products	kt CO_2 eq							

Abbreviations: GHG = greenhouse gas, LULUCF = land use, land-use change and forestry.
a Reporting by a developed country Party on the information specified in the common tabular format does not prejudge the position of other Parties with regard to the treatment of units from market-based mechanisms under the Convention or other market-based mechanisms towards achievement of quantified economy-wide emission reduction targets.
b Parties that use the LULUCF approach that is based on table 1 do not need to complete this table, but should indicate the approach in table 2. Parties should fill in a separate table for each year, namely 20XX-3 and 20XX-2, where 20XX is the reporting year.
c For each category, enter the net emissions or removals reported in the most recent inventory submission for the corresponding inventory year. If a category differs from that used for the reporting under the Convention or its Kyoto Protocol, explain in the biennial report how the value was derived.

TABLE 4(A)-II[13]
PROGRESS IN ACHIEVING THE QUANTIFIED ECONOMY-WIDE EMISSION REDUCTION TARGETS –FURTHER INFORMATION ON MITIGATION ACTIONS RELEVANT TO THE COUNTING OF EMISSIONS AND REMOVALS FROM THE LAND USE, LAND-USE CHANGE AND FORESTRY SECTOR IN RELATION TO ACTIVITIES UNDER ARTICLE 3, PARAGRAPHS 3 AND 4 OF THE KYOTO PROTOCOL[a,b,c]

GREENHOUSE GAS SOURCE AND SINK ACTIVITIES	Base year[d]	Net emissions/removals[e]				Accounting parameters[h]	Accounting quantity[i]
		2008	2009	…[f]	Total[g]		
	(kt CO_2 eq)						
A. Article 3, paragraph 3, activities							
A.1. Afforestation and reforestation							
A.1.1. Units of land not harvested since the beginning of the commitment period[j]							
A.1.2. Units of land harvested since the beginning of the commitment period[j]							
A.2. Deforestation							
B. Article 3, paragraph 4, activities							
B.1. Forest management (if elected)							
3.3 offset[k]							
Forest management cap[l]							
B.2. Cropland management (if elected)							
B.3. Grazing land management (if elected)							
B.4. Revegetation (if elected)							

Note: 1 kt CO2 eq equals 1 Gg CO2 eq.
Abbreviations: CRF = common reporting format, LULUCF = land use, land-use change and forestry.
a Reporting by a developed country Party on the information specified in the common tabular format does not prejudge the position of other Parties with regard to the treatment of units from market-based mechanisms under the Convention or other market-based mechanisms towards achievement of quantified economy-wide emission reduction targets.
b Developed country Parties with a quantified economy-wide emission reduction target as communicated to the secretariat and contained in document FCCC/SB/2011/INF.1/Rev.1 or any update to that document, that are Parties to the Kyoto Protocol, may use table 4(a)II for reporting of accounting quantities if LULUCF is contributing to the attainment of that target.
c Parties can include references to the relevant parts of the national inventory report, where accounting methodologies regarding LULUCF are further described in the documentation box or in the biennial reports.
d Net emissions and removals in the Party's base year, as established by decision 9/CP.2.
e All values are reported in the information table on accounting for activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol, of the CRF for the relevant inventory year as reported in the current submission and are automatically entered in this table.

[13] Turkey as a non-Annex B country, has no quantified emission reduction target within the reporting period of the Joint First and Second Biennial Report (BR) or in any foreseeable future. Therefore, the Table 4(A)II is inapplicable for the case of Turkey and is left blank.

f Additional columns for relevant years should be added, if applicable.
g Cumulative net emissions and removals for all years of the commitment period reported in the current submission.
h The values in the cells "3.3 offset" and "Forest management cap" are absolute values.
i The accounting quantity is the total quantity of units to be added to or subtracted from a Party's assigned amount for a particular activity in accordance with the provisions of Article 7, paragraph 4, of the Kyoto Protocol.
j In accordance with paragraph 4 of the annex to decision 16/CMP.1, debits resulting from harvesting during the first commitment period following afforestation and reforestation since 1990 shall not be greater than the credits accounted for on that unit of land.
k In accordance with paragraph 10 of the annex to decision 16/CMP.1, for the first commitment period a Party included in Annex I that incurs a net source of emissions under the provisions of Article 3 paragraph 3, may account for anthropogenic greenhouse gas emissions by sources and removals by sinks in areas under forest management under Article 3, paragraph 4, up to a level that is equal to the net source of emissions under the provisions of Article 3, paragraph 3, but not greater than 9.0 megatonnes of carbon times five, if the total anthropogenic greenhouse gas emissions by sources and removals by sinks in the managed forest since 1990 is equal to, or larger than, the net source of emissions incurred under Article 3, paragraph 3.
l In accordance with paragraph 11 of the annex to decision 16/CMP.1, for the first commitment period of the Kyoto Protocol only, additions to and subtractions from the assigned amount of a Party resulting from Forest management under Article 3, paragraph 4, after the application of paragraph 10 of the annex to decision 16/CMP.1 and resulting from forest management project activities undertaken under Article 6, shall not exceed the value inscribed in the appendix of the annex to decision 16/CMP.1, times five.

TABLE 4(B)[14]
REPORTING ON PROGRESS[a,b,c]

	Quantity of units	kt CO_2 eq	Comments
Year			
Kyoto Protocol Units[d]			
AAUs			
ERUs			
CERs			
tCERs			
lCERs			
Units from market-based mechanisms under the Convention[d,e]			
Units from other market-based mechanisms[d, e]			
Total			

Abbreviations: AAUs = assigned amount units, CERs = certified emission reductions, ERUs = emission reduction units, lCERs = long-term certified emission reductions, tCERs = temporary certified emission reductions.
a Reporting by a developed country Party on the information specified in the common tabular format does not prejudge the position of other Parties with regard to the treatment of units from market-based mechanisms under the Convention or other market-based mechanisms towards achievement of quantified economy-wide emission reduction targets.
b For each reported year, information reported on progress made towards the emission reduction target shall include, in addition to the information noted in paragraphs 9(a-c) of the reporting guidelines, on the use of units from market-based mechanisms.
c Parties may include this information, as appropriate and if relevant to their target.
d Units surrendered by that Party for that year that have not been previously surrendered by that or any other Party.
e Additional columns for each market-based mechanism should be added, if applicable.

[14] Turkey as a non-Annex B country, has no quantified emission reduction target within the reporting period of the Joint First and Second Biennial Report (BR) or in any foreseeable future. Therefore, the Table 4(B) is inapplicable for the case of Turkey and is left blank.

Chapter V: Projections

As referred in Turkey's Sixth National Communication, in accordance with decisions 1/CP.19 and 1/CP.20, on 30 September 2015, the Republic of Turkey submitted its Intended Nationally Determined Contribution (INDC) to UNFCCC towards achieving the ultimate objective of the Convention, which is set out in its Article 2 and clarifying information. The study of projections of GHG emissions which constituted the basis for the INDC was carried out under the project called "Preparation of Turkey's Sixth National Communication on Climate Change", implemented by Ministry of Environment and Urbanisation and Scientific and Technological Research Council of Turkey (TUBITAK) Marmara Research Center. In this section, the projections of greenhouse gas emissions by 2030 are based on two scenarios: Business-As-Usual Scenario and Mitigation Scenario. Times-MACRO model has been used for energy related modeling, while for non-energy sectors different national models and studies have been preferred.

The key underlying assumptions used to estimate future greenhouse gas emissions are presented in Table 5. Turkey achieved 230% increase in GDP between 1990 and 2012. While Turkey's annual GDP growth stood at 2.1% in 2012, it is projected to reach 4% by 2030. Its population has increased to 75.6 million by more than 30% from 1990 to 2012. Turkey's energy demand increases by 6-7% every year. According to the projections by Ministry of Energy and Natural Resources, electricity demand in 2030 will reach 580 TWh under the business-as-usual scenario.

Emissions factors used to calculate GHG emissions are based on 2014 National Inventory Report[15], 2006 IPCC Guidelines and collected data provided by various national institutions. Global warming potential used for calculation of CO_2 equivalent emissions is in accordance with the IPCC's Fourth Assessment Report.

V.A. Without Measures / Business-As-Usual Scenario

The business-as-usual scenario projects greenhouse gas emissions up to 2030 based on the case that the mitigation measures which have been legalised, applied or planned since 2012 will not be implemented between 2012 and 2030. Greenhouse gas emissions for 1990-2012 and projected emissions up to 2030 are provided in Table 6.CO_2 emissions are projected to increase about 187% by 2030 compared to 2012. CO_2 emissions, which were 79% of the total emissions in 2012, are projected to be 84% and 87% to total emissions in 2020 and 2030 respectively (without LULUCF) due to a gradual increase in energy consumption to be realized based on the increase expected to be reached in population and GDP. The ratio of CH_4 and N_2O emissions to total emissions is 15% and 5% in 2012 respectively. The ratio of CH_4 emissions to total emissions is 11% and 9% in 2020 and 2030 respectively, while the ratio of N_2O emissions to total emissions is 4% and 3% 2020 and 2030 respectively. On the other hand, the ratio of fluorinated gases emissions to total emissions is not expected to change much by 2030. In business-as-usual scenario, emissions from energy consumption are projected to increase about 27.3 Mton CO_2-equiv per year for 2012-2020 and about 40.5 Mton CO_2-equiv per year for 2020-2030.

V.B. With Measures / Mitigation Scenario

In mitigation scenario, emissions for 2012-2030 were developed based on mitigation measures from various policy papers and strategic documents. Under the mitigation scenario, it is projected that the decrease in CO_2 emissions will be about 149% from 2012 to 2030. The ratio of CO_2 emissions to total GHG emissions will be 84% and 86% in 2020 and 2030 respectively. Compared to business-as-usual scenario, emissions of CO_2 and NH_4 are projected to decrease 19% and 15% respectively by 2030 (without LULUCF). The ratio of CH_4, N_2O and fluorinated gases emissions to total GHG emissions are slightly different compared to business-as-usual scenario.

When evaluating emission projections by sector, it shows that the greatest mitigation will happen in the waste sector up to 23% by 2030. Rehabilitation of unmanaged waste sites and recovery of methane gas from landfill gas will play a major role in mitigation. The energy sector will be in the second place of the greatest mitigation up to 22% by 2030.

[15] Turkey submitted its National Inventory Report (NIR), along with annual greenhouse gas inventories for 1990 to 2013, as of 12 November 2015. The GHG Projection study which would consitute the basis for the Intended Nationally Determined Contribution (INDC) submitted by Turkey on 30 September 2015, had to be initiated in advance and therefore based on 2014 NIR 2014, rather than 2015 NIR.

Renewables and plans/policies about nuclear power will be effective in mitigation in the energy sector. It is also projected that urban transformation will help the mitigation in the industrial processes sector. With regards to the LULUCF, Turkey aims to increase its forestland to cover 30% of the country (23.400.000 ha) by 2023. In addition, it is anticipated that removals by sinks will rise by 40% until 2030 related to 2012 for mitigation scenario. There is also anticipated that removals by sinks will change 90% at 2030 between two scenarios.

Greenhouse gas emissions for 1990-2012 and projected emissions up to 2030 for mitigation scenario are provided in Table 6. For detailed information on the plans and policies to be implemented in energy, industry, transport, buildings and urban transformation, agriculture, waste and forestry sectors, please refer to the "Chapter 5 on Projections of Greenhouse Gas Emissions" of Turkey's Sixth National Communication.

Consequently, as submitted in the context of the INDC, up to 21 percent reduction in GHG emissions from business-as-usual scenario level by 2030 is anticipated and believed to enable Turkey to step on low-carbon development pathways compatible with the long-term objective of limiting the increase in global temperature below 2^0C. Recalling the decisions 26/CP.7, 1/CP.16, 2/CP.17, 1/CP.18 and 21/CP.20, in view of successfully implementing this INDC, Turkey will use domestic sources and receive international financial, technological, technical and capacity building support.

The emission reductions to be achieved by the referred policies and plans compared to the business-as-usual scenario are presented in the figure below.

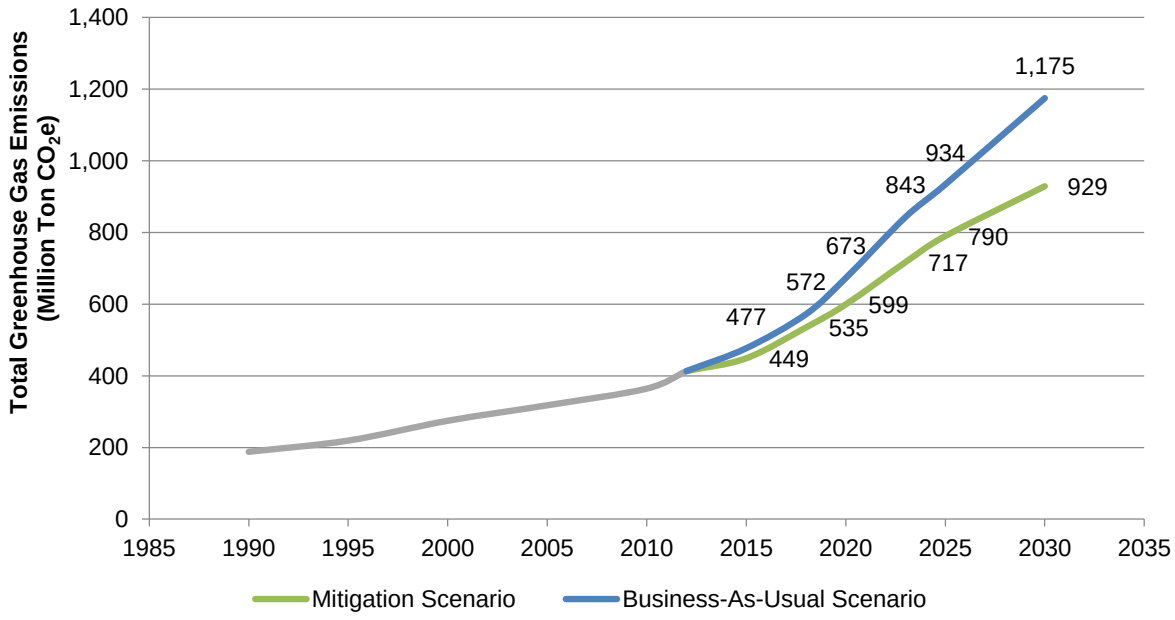

TABLE 5
SUMMARY OF KEY VARIABLES AND ASSUMPTIONS USED IN THE PROJECTIONS ANALYSIS

		Historical								Projected			
Key underlying assumptions	Unit	1990	1995	2000	2005	2010	2011	2012	2015	2020	2025	2030	Comment
Population	thousands							75,627	78,151	82,076	85,569	88,427	
Annual population growth rate	%							1.38%	1.07%	0.93%	0.75%	0.60%	
Annual GDP Growth Rate	%							2.10%	3.50%	4.15%	4.25%	4.12%	

TABLE 6
INFORMATION ON UPDATED GREENHOUSE GAS PROJECTIONS UNDER "WITH MEASURES" AND "WITHOUT MEASURES" SCENARIOS

		GHG emissions and removals							GHG emission projections - Scenarios				
									With measures		Without measures		
GHG emissions projections	Unit	Base Year	1990	1995	2000	2005	2010	2012	2020	2030	2020	2030	Comment
Sector													
Energy	kt CO_2 eq	131,565.75	131,565.75	158,808.63	213,775.61	251,828.68	284,789.80	320,763.49	499,335.53	738,265.86	538,886.82	943,547.02	
Transport	kt CO_2 eq												Transportation sector is included in Energy Sector.
Industrial processes	kt CO_2 eq	31,078.14	31,078.14	33,691.65	36,247.47	46,866.52	59,976.96	69,567.21	94,750.20	169,753.80	94,750.20	169,753.80	
Agriculture	kt CO_2 eq	41,598.46	41,598.46	40,168.62	40,095.35	38,459.86	39,797.70	46,337.76	51,557.04	59,277.89	51,557.04	59,277.89	
Forestry/LULUCF	kt CO_2 eq	-30,175.60	-30,175.60	-30,171.12	-36,178.16	-43,927.43	-47,459.46	-50,850.55	-70,035.88	-69,710.38	-40,193.25	-38,698.13	
Waste management/waste	kt CO_2 eq	13,922.63	13,922.63	16,856.75	20,660.48	24,576.19	27,177.52	27,552.71	23,610.00	31,400.00	27,900.00	40,900.00	
Other Sectors													
Gases													
CO_2 emissions including net CO_2 from LULUCF	kt CO_2 eq	123,651.24	123,651.24	154,125.52	202,850.19	241,999.47	278,645.64	317,488.21	494,057.44	790,338.43	561,857.87	1,018,359.96	
CO_2 emissions excluding net CO_2 from LULUCF	kt CO_2 eq	153,826.86	153,826.86	184,296.66	239,028.41	285,926.90	326,105.11	368,338.79	564,093.32	860,048.81	602,051.13	1,057,058.09	
CH_4 emissions including CH_4 from LULUCF	kt CO_2 eq	46,764.84	46,764.84	48,474.31	51,022.94	52,216.91	60,441.23	67,606.79	71,214.67	91,824.92	76,549.20	107,651.46	
CH_4 emissions excluding CH_4 from LULUCF	kt CO_2 eq	46,764.84	46,764.84	48,474.31	51,022.94	52,216.91	60,441.23	67,606.79	71,214.67	91,824.92	76,549.20	107,651.46	
N_2O emissions including N_2O from LULUCF	kt CO_2 eq	16,969.87	16,969.87	16,238.28	19,004.20	19,663.59	19,477.88	21,044.15	25,170.91	31,104.62	25,719.86	33,049.96	
N_2O emissions excluding N_2O from LULUCF	kt CO_2 eq	16,969.87	16,969.87	16,238.28	19,004.20	19,663.59	19,477.88	21,044.15	25,170.91	31,104.62	25,719.86	33,049.96	
HFCs	kt CO_2 eq	NO	NO	NO	900.27	2,616.90	4,882.28	6,305.04	7,504.22	13,444.50	7,504.22	13,444.50	
PFCs	kt CO_2 eq	603.43	603.43	516.43	515.12	487.76	NE	NE	NE	NE	NE	NE	
SF_6	kt CO_2 eq	NE	NE	NE	308.03	819.20	835.48	926.43	1,269.65	2,274.70	1,269.65	2,274.70	
Other gases													
Total with LULUCF	kt CO_2 eq	187,989.38	187,989.38	219,354.53	274,600.75	317,803.82	364,282.52	413,370.63	599,216.88	928,987.17	672,900.81	1,174,780.58	
Total without LULUCF	kt CO_2 eq	218,164.98	218,164.98	249,525.65	310,778.90	361,731.24	411,741.98	464,221.17	669,252.76	998,697.55	713,094.06	1,213,478.71	

Chapter VI: Financial, Technological and Capacity-Building Support

As referred in its 5th and 6th National Communication, Turkey, as a non-Annex II country, is not responsible for providing support to developing countries according to Articles 4.3, 4.4, 4.5 of the UNFCCC, and Article 11 of the Kyoto Protocol.

Turkey, although listed in Annex I to the Convention, is a developing country according to both the World Bank and International Monetary Foundation classifications. Indeed, while Turkey is an OECD member, it is recognized by the OECD Development Assistance Committee as among the countries that may benefit from Official Development Assistance (ODA).

As a developing country Turkey could have accessed resources from bilateral and multilateral development banks and international funds to combat climate change. Turkey has been the first country to benefit from the Climate Investment Funds managed by the World Bank, and has also received bilateral and multilateral financing for renewable energy and energy efficiency investments. Turkey is eligible to receive finance from the main mechanism of the UNFCCC - Global Environment Mechanism (GEF) - and has been one of the best users of the GEF grants. Additionally, Turkey was also eligible to short-term financing facility of $30 billion that was committed by developed countries under Copenhagen Accord with an aim to provide support to developing countries in their investments to combat with climate change. This position, as agreed by Cancun Agreements (Decision 2/CP17), also highlights the special circumstances of Turkey among other Annex I countries of the UNFCCC.

The COP decision 26/CP.7 agreed to amend the list in Annex II to the Convention by deleting the name of Turkey and invited Parties to recognize the special circumstances of Turkey, which place Turkey, after becoming a Party, in a situation different from that of other Parties included in Annex I to the Convention. Decision 1/CP.16 recognized the special circumstances of Turkey and placed Turkey in a different situation than the other Parties included in Annex I. The Decision requested the Ad Hoc Working Group on Long-term Cooperative Action under the Convention to continue consideration of these issues with a view to promoting access by Turkey to finance, technology and capacity-building in order to enhance its ability to better implement the Convention. Decision 1/CP.18 reaffirmed the importance of the financial, technological and capacity-building supports to Turkey as an Annex I Party special circumstances of which is recognized by the CoP so that it becomes able to implement the Convention more efficiently and encouraged the Annex II countries with appropriate conditions to provide financial, technological, technical and capacity-building supports to the Annex I countries with special position through multilateral agencies. Decision 21/CP.20 encouraged Parties included in Annex I to the Convention whose special circumstances are recognized by the CoP to fully utilize the opportunities to benefit, at least until 2020, from support from relevant bodies established under the Convention and other relevant bodies and institutions to enhance mitigation, adaptation, technology, capacity-building and access to finance.

Consequently, Turkey is a developing and emerging country, accomplished an average 5% GDP growth per annum for the last decade which is one of the greatest in the world. In order to implement its nationally determined contribution and to achieve ambitious national targets such as increasing share of renewable energy in national mix and mobilize its huge mitigation potential, Turkey needs to access financial resources in addition to existing funds that Turkey can access. For the continuation of efforts of Turkey to combat with global climate change within the perspective of common but differentiated responsibilities of countries, it is critical for Turkey to access financial resources and mechanisms under UNFCCC in particular Green Climate Fund.

The BR Table 7 on finance, BR Table 8 on technology development and transfer and BR Table 9 on capacity building are inapplicable for the case of Turkey and left blank throughout the report.

VI.A. Finance

TABLE 7
PROVISION OF PUBLIC FINANCIAL SUPPORT: SUMMARY INFORMATION IN 20XX-3[a]

Year										
Allocation Channels	Domestic Currency					USD[b]				
	Core/General[c]	Climate Specific[d]				Core/General	Climate Specific[d]			
		Mitigation	Adaptation	Cross-cutting[e]	Other		Mitigation	Adaptation	Cross-cutting[e]	Other[f]
Total contributions through multilateral channels										
Multilateral climate change funds[g]										
Other multilateral climate change funds[h]										
Multilateral financial institutions, including regional development banks										
Specialized United Nations bodies										
Total contributions through bilateral, regional and other channels										
Total										

Abbreviation: USD = United States dollars.
a Parties should fill in a separate table for each year, namely 20XX-3 and 20XX-2, where 20XX is the reporting year.
b Parties should provide an explanation on methodology used for currency exchange for the information provided in table 7, 7(a) and 7(b) in the box below.
c This refers to support to multilateral institutions that Parties cannot specify as climate-specific.
d Parties should explain in their biennial reports how they define funds as being climate-specific.
e This refers to funding for activities which are cross-cutting across mitigation and adaptation.
f Please specify.
g Multilateral climate change funds listed in paragraph 17(a) of the "UNFCCC biennial reporting guidelines for developed country Parties" in decision 2/CP.17.
h Other multilateral climate change funds as referred in paragraph 17(b) of the "UNFCCC biennial reporting guidelines for developed country Parties" in decision 2/CP.17.

Each Party shall provide an indication of what new and additional financial resources they have provided, and clarify how they have determined that such resources are new and additional. Please provide this information in relation to table 7(a) and table 7(b).
Documentation box:

TABLE 7(A)
PROVISION OF PUBLIC FINANCIAL SUPPORT: CONTRIBUTION THROUGH MULTILATERAL CHANNELS IN 20XX-3[a]

	Total Amount				Status[b]	Funding source	Financial instrument	Type of support	Sector[c]
	Core/General[d]		Climate Specific[e]						
Donor Funding	Domestic Currency	USD	Domestic Currency	USD	Provided Committed Pledged	ODA OOF Other[f]	Grant Concessional Loan Non-concessional Loan Equity Other[f]	Mitigation Adaptation Cross-cutting[g] Other[f]	Energy Transport Industry Agriculture Forestry Water and Sanitation Cross-cutting Other[f] Not Applicable
Multilateral climate change funds									
1. Global Environment Facility									
2. Least Developed Countries Fund									
3. Special Climate Change Fund									
4. Adaptation Fund									
5. Green Climate Fund									
6. UNFCCC Trust Fund for Supplementary Activities									
7. Other multilateral climate change funds									
Subtotal									
Multilateral financial institutions, including regional development banks									
1. World Bank									
2. International Finance Corporation									
3. African Development Bank									
4. Asian Development Bank									
5. European Bank for Reconstruction and Development									
6. Inter-American Development Bank									
7. Other									
Subtotal									

Specialized United Nations bodies									
1. United Nations Development Programme (spcecific programmes)									
2. United Nations Environment Programme (specific programes)									
3. Other									
Subtotal									
Total									

Abbreviations: ODA = official development assistance, OOF = other official flows.
a Parties should fill in a separate table for each year, namely 20XX-3 and 20XX-2, where 20XX is the reporting year.
b Parties should explain, in their biennial reports, the methodologies used to specify the funds as provided, committed and/or pledged. Parties will provide the information for as many status categories as appropriate in the following order of priority: provided, committed, pledged.
c Parties may select several applicable sectors. Parties may report sectoral distribution, as applicable, under “Other”.
d This refers to support to multilateral institutions that Parties cannot specify as climate-specific.
e Parties should explain in their biennial reports how they define funds as being climate-specific.
f Please specify.
g This refers to funding for activities which are cross-cutting across mitigation and adaptation.

TABLE 7(B)
PROVISION OF PUBLIC FINANCIAL SUPPORT: CONTRIBUTION THROUGH BILATERAL, REGIONAL AND OTHER CHANNELS IN 20XX-3[a]

	Total Amount		Status[c]	Funding Source	Financial Instrument	Type of Support	Sector[d]	Additional Information[e]
	Climate Specific[f]							
Recipient Country/ Region/Project/Programme[b]	Domestic Currency	USD	Provided Committed Pledged	ODA OOF Other[g]	Grant Concessional Loan Non-concessional Loan Equity Other[g]	Mitigation Adaptation Cross-cutting[h] Other[g]	Energy Transport Industry Agriculture Forestry Water and Sanitation Cross-cutting Other[g]	

Abbreviations: ODA = official development assistance, OOF = other official flows; USD = United States dollars.
a Parties should fill in a separate table for each year, namely 20XX-3 and 20XX-2, where 20XX is the reporting year.
b Parties should report, to the extent possible, on details contained in this table.
c Parties should explain, in their biennial reports, the methodologies used to specify the funds as provided, committed and/or pledged. Parties will provide the information for as many status categories as appropriate in the following order of priority: provided, committed, pledged.
d Parties may select several applicable sectors. Parties may report sectoral distribution, as applicable, under "Other".
e Parties should report, as appropriate, on project details and the implementing agency.
f Parties should explain in their biennial reports how they define funds as being climate-specific.
g Please specify.
h This refers to funding for activities which are cross-cutting across mitigation and adaptation.

VI.B. Technology Development and Transfer

TABLE 8
PROVISION OF TECHNOLOGY DEVELOPMENT AND TRANSFER SUPPORT[a, b]

Recipient Country and/or Region	Targeted Area	Measures and Measures ad Activities Related to Technology Transfer	Sector[c]	Source of the Funding for Technology Transfer	Activities Undertaken by	Status	Additional Information[d]
	Mitigation Adaptation Mitigation and Adaptation		Energy Transport Industry Agriculture Water and Sanitation Other	Private Public Private and Public	Private Public Private and Public	Implemented Planned	

a To be reported to the extent possible.
b The tables should include measures and activities since the last national communication or biennial report.
c Parties may report sectoral disaggregation, as appropriate.
d Additional information may include, for example, funding for technology development and transfer provided, a short description of the measure or activity and co-financing arrangements.

VI.C. Capacity-Building

TABLE 9
PROVISION OF CAPACITY BUILDING SUPPORT[a]

Recipient Country / Region	Targeted Area	Programme or Project Title	Description of Programme or Project[b,c]
	Mitigation Adaptation Technology Development and Transfer Multiple Areas		

a To be reported to the extent possible.
b Each Party included in Annex II to the Convention shall provide information, to the extent possible, on how it has provided capacity-building support that responds to the existing and emerging capacity-building needs identified by Parties not included in Annex I to the Convention in the areas of mitigation, adaptation and technology development and transfer.
c Additional information may be provided on, for example, the measure or activity and co-financing arrangements.