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# The First Biennial Report of Malta

annex to the  
National Communication  
(3rd, 4th, 5th and 6th) of  
Malta under the UNFCCC

The Malta Resources Authority  
on behalf of the  
Ministry for Sustainable  
Development, Environment and  
Climate Change

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# **The First Biennial Report of Malta under the United Nations Framework Convention on Climate Change**

**March 2014**



## I. Introduction

At the 16<sup>th</sup> Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC) held in Cancun, Mexico, in 2010, it was decided that “Developed countries should submit [...] biennial reports on their progress in achieving emission reductions, including information on mitigation actions to achieve their quantified economy-wide emission targets and emission reductions achieved, projected emissions and the provision of financial, technology and capacity-building support to developing country Parties”<sup>1</sup>.

At the subsequent Conference of the Parties held in Durban, South Africa, in 2011, a decision was taken for Annex I Parties to submit these biennial reports prepared in accordance with guidelines established under Decision 2/CP.17<sup>2</sup>.

This is Malta's First Biennial Report, and is submitted as an annex to the 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> National Communication of Malta, 2014. To this effect the discussion of relevant elements covered by this report is not presented in detail, and where applicable, reference is made to sections in the National Communication which provide a deeper understanding of the information presented here.

The Biennial Report is accompanied by data and information submitted electronically in Common Tabular Format (CTF). Relevant tables submitted thus are reproduced in this report.

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<sup>1</sup> Decision 1/CP.16 ‘The Cancun Agreements: Outcome of the work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention’, FCCC/CP/2010/7/Add.1.

<sup>2</sup> Decision 2/CP.17 ‘Outcome of the work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention’, FCCC/CP/2011/9/Add.1.



## II. Greenhouse Gas Emissions and Trends

**Refer to Chapter 2 of the National Communication, 2014, for more detailed information.**

The estimation of emissions by sources and removals by sinks of greenhouse gases (GHG) contained in Malta's inventory submission covers the following greenhouse gases:

- Carbon dioxide (CO<sub>2</sub>);
- Methane (CH<sub>4</sub>);
- Nitrous Oxide (N<sub>2</sub>O);
- Hydro fluorocarbons (HFCs);
- Per fluorocarbons (PFCs); and,
- Sulphur Hexafluoride (SF<sub>6</sub>).

The sectors for which estimation of emissions or removals is carried out are:

- Energy;
- Industrial Processes;
- Solvents and Other Products Use;
- Agriculture;
- Land Use, Land-Use Change and Forestry (LULUCF); and,
- Waste.

This Biennial Report submission includes data on emissions and removals for the period from 1990 to 2011, as provided in Malta's submission of its national GHG Inventory under the UNFCCC in 2013<sup>3</sup>.

Figure II-1 presents the trend in national emissions as split by gas, while Figure II-2 shows emission and removal trends split by sector. Figure II-1 shows that CO<sub>2</sub> is the greenhouse gas that accounts for the absolute majority of national emissions in Malta, in 2011 amounting to 87.9% of total national greenhouse gas emissions (in terms of CO<sub>2</sub> equivalent). CH<sub>4</sub> and HFCs respectively have the second and third highest share of total emissions, followed by N<sub>2</sub>O. The sector Energy is responsible for the highest share of emissions (Figure II-2) among all sectors covered by Malta's inventory, with a share of 89% of gross (i.e. excluding removals of CO<sub>2</sub> by the sector LULUCF) total national greenhouse gas emissions in 2011. This sector includes, among others, source categories Energy Industries and Road Transport, themselves the first and second highest contributing source categories to total national greenhouse gas emissions.

### **CTF tables reproduced in this section:**

Table 1	Emissions Trends: Summary;
Table 1(a)	Emissions Trends (CO <sub>2</sub> );
Table 1(b)	Emission Trends (CH <sub>4</sub> );
Table 1(c)	Emissions Trends (N <sub>2</sub> O);
Table 1(d)	Emissions Trends (HFCs, PFCs and SF <sub>6</sub> ).

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<sup>3</sup> *National Greenhouse Gas Emissions Inventory for Malta 2013*, Malta Resources Authority, 2013.

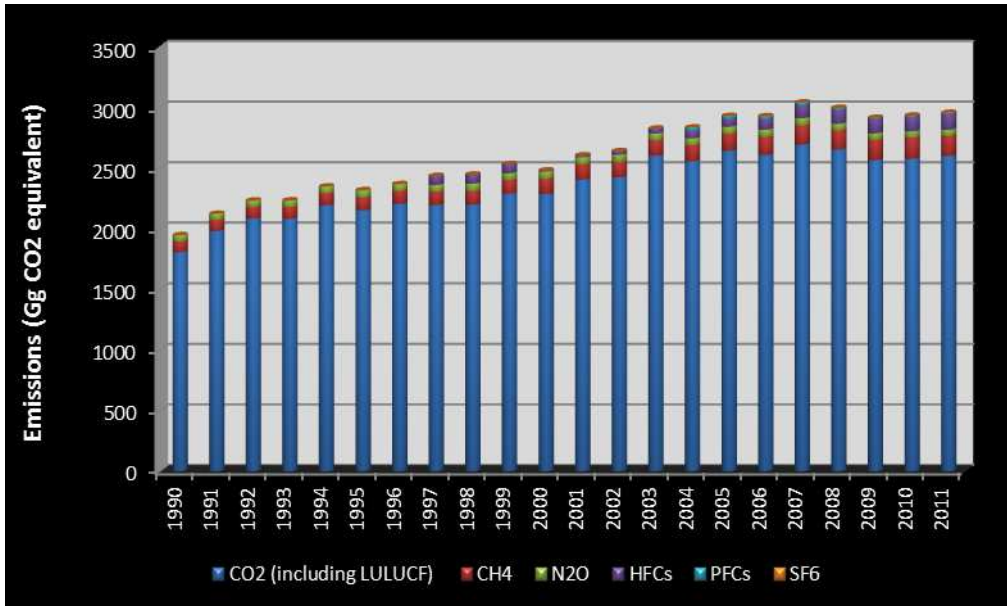


Figure II-1 Trends in national greenhouse gas emissions, by gas.

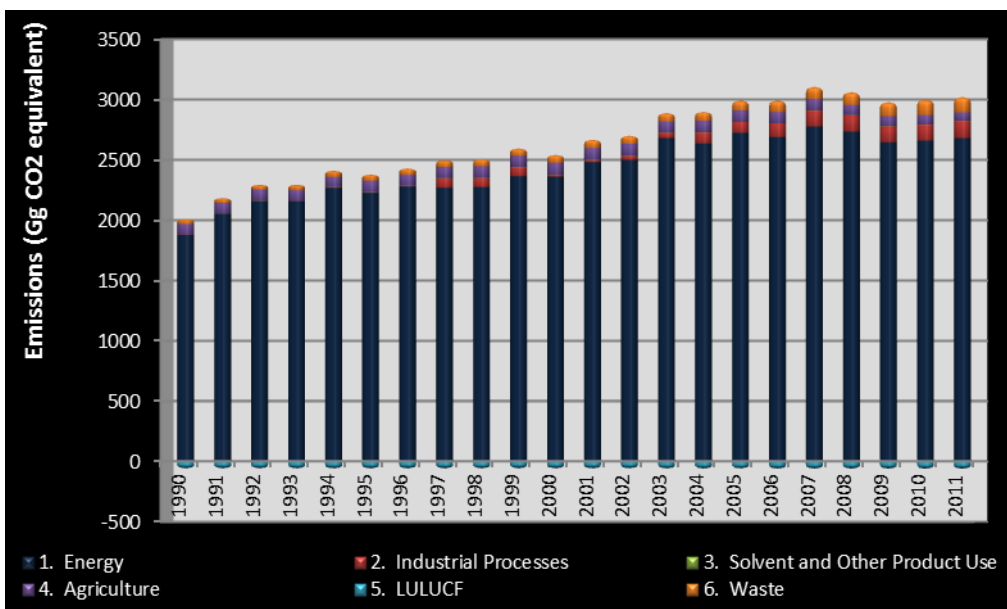


Figure II-2 Trends in national greenhouse gas emissions and removals, by sector.

Table 1  
Emission trends: summary <sup>(1)</sup>  
(Sheet 1 of 3)

<i>GREENHOUSE GAS EMISSIONS</i>	Base year <sup>a</sup>	1991	1992	1993	1994	1995	1996	1997	1998
	<i>kt CO<sub>2</sub> eq</i>	<i>kt CO<sub>2</sub> eq</i>	<i>kt CO<sub>2</sub> eq</i>	<i>kt CO<sub>2</sub> eq</i>	<i>kt CO<sub>2</sub> eq</i>	<i>kt CO<sub>2</sub> eq</i>	<i>kt CO<sub>2</sub> eq</i>	<i>kt CO<sub>2</sub> eq</i>	<i>kt CO<sub>2</sub> eq</i>
CO <sub>2</sub> emissions including net CO <sub>2</sub> from LULUCF	1,808.97	1,984.46	2,088.92	2,084.87	2,196.32	2,156.49	2,208.66	2,198.73	2,202.09
CO <sub>2</sub> emissions excluding net CO <sub>2</sub> from LULUCF	1,865.50	2,041.00	2,145.45	2,141.41	2,252.86	2,213.03	2,265.20	2,255.27	2,258.63
CH <sub>4</sub> emissions including CH <sub>4</sub> from LULUCF	91.11	91.36	94.38	98.11	100.87	104.70	106.97	110.40	112.16
CH <sub>4</sub> emissions excluding CH <sub>4</sub> from LULUCF	91.11	91.36	94.38	98.11	100.87	104.70	106.97	110.40	112.16
N <sub>2</sub> O emissions including N <sub>2</sub> O from LULUCF	49.94	50.42	51.66	52.83	54.28	59.15	54.94	55.41	61.21
N <sub>2</sub> O emissions excluding N <sub>2</sub> O from LULUCF	49.94	50.42	51.66	52.83	54.28	59.15	54.94	55.41	61.21
HFCs	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	73.87	73.87
PFCs	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO
SF <sub>6</sub>	0.01	0.01	1.50	1.50	1.50	1.51	1.52	1.52	1.54
<b>Total (including LULUCF)</b>	<b>1,950.02</b>	<b>2,126.25</b>	<b>2,236.45</b>	<b>2,237.32</b>	<b>2,352.98</b>	<b>2,321.85</b>	<b>2,372.09</b>	<b>2,439.93</b>	<b>2,450.86</b>
<b>Total (excluding LULUCF)</b>	<b>2,006.56</b>	<b>2,182.79</b>	<b>2,292.99</b>	<b>2,293.85</b>	<b>2,409.52</b>	<b>2,378.38</b>	<b>2,428.63</b>	<b>2,496.47</b>	<b>2,507.40</b>

<i>GREENHOUSE GAS SOURCE AND SINK CATEGORIES</i>	Base year <sup>a</sup>	1991	1992	1993	1994	1995	1996	1997	1998
	<i>kt CO<sub>2</sub> eq</i>	<i>kt CO<sub>2</sub> eq</i>	<i>kt CO<sub>2</sub> eq</i>	<i>kt CO<sub>2</sub> eq</i>	<i>kt CO<sub>2</sub> eq</i>	<i>kt CO<sub>2</sub> eq</i>	<i>kt CO<sub>2</sub> eq</i>	<i>kt CO<sub>2</sub> eq</i>	<i>kt CO<sub>2</sub> eq</i>
1. Energy	1,878.10	2,054.36	2,159.82	2,156.12	2,267.74	2,226.04	2,278.68	2,268.69	2,272.74
2. Industrial Processes	0.33	0.53	1.65	1.69	1.99	3.21	3.04	77.11	76.54
3. Solvent and Other Product Use	2.48	2.48	2.48	2.48	2.48	2.48	2.48	2.48	2.48
4. Agriculture	87.81	85.53	86.96	87.53	86.80	93.83	90.93	92.85	95.39
5. Land Use, Land-Use Change and Forestry <sup>b</sup>	-56.54	-56.54	-56.54	-56.54	-56.54	-56.54	-56.54	-56.54	-56.54
6. Waste	37.84	39.88	42.08	46.04	50.51	52.81	53.49	55.34	60.25
7. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Total (including LULUCF)</b>	<b>1,950.02</b>	<b>2,126.25</b>	<b>2,236.45</b>	<b>2,237.32</b>	<b>2,352.98</b>	<b>2,321.85</b>	<b>2,372.09</b>	<b>2,439.93</b>	<b>2,450.86</b>

Note: All footnotes for this table are given on sheet 3.

<sup>1</sup> The common tabular format will be revised, in accordance with relevant decisions of the Conference of the Parties and, where applicable, with decisions of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol."



Table 1  
Emission trends: summary <sup>(1)</sup>  
(Sheet 2 of 3)

GREENHOUSE GAS EMISSIONS	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
	kt CO <sub>2</sub> eq	kt CO <sub>2</sub> eq	kt CO <sub>2</sub> eq	kt CO <sub>2</sub> eq	kt CO <sub>2</sub> eq	kt CO <sub>2</sub> eq	kt CO <sub>2</sub> eq	kt CO <sub>2</sub> eq	kt CO <sub>2</sub> eq	kt CO <sub>2</sub> eq
CO <sub>2</sub> emissions including net CO <sub>2</sub> from LULUCF	2,292.18	2,289.28	2,408.93	2,428.89	2,606.68	2,560.42	2,646.95	2,612.14	2,698.03	2,656.76
CO <sub>2</sub> emissions excluding net CO <sub>2</sub> from LULUCF	2,348.08	2,345.19	2,464.84	2,484.80	2,663.68	2,618.59	2,704.03	2,671.01	2,756.89	2,715.63
CH <sub>4</sub> emissions including CH <sub>4</sub> from LULUCF	113.79	125.00	125.50	126.91	126.78	132.84	139.88	148.73	158.78	157.99
CH <sub>4</sub> emissions excluding CH <sub>4</sub> from LULUCF	113.79	125.00	125.50	126.91	126.78	132.84	139.88	148.73	158.78	157.99
N <sub>2</sub> O emissions including N <sub>2</sub> O from LULUCF	56.48	61.00	58.68	58.19	55.46	56.48	58.51	59.89	59.26	55.72
N <sub>2</sub> O emissions excluding N <sub>2</sub> O from LULUCF	56.48	61.00	58.68	58.19	55.46	56.48	58.51	59.89	59.26	55.72
HFCs	73.87	8.29	15.33	28.70	40.06	60.42	64.51	87.50	106.15	116.73
PFCs	NA, NE, NO	0.00	0.00	0.00	0.00	27.90	23.39	23.27	22.81	12.93
SF <sub>6</sub>	1.54	1.54	1.56	1.57	2.16	1.62	1.64	1.65	1.66	1.83
<b>Total (including LULUCF)</b>	<b>2,537.86</b>	<b>2,485.12</b>	<b>2,610.00</b>	<b>2,644.26</b>	<b>2,831.14</b>	<b>2,839.68</b>	<b>2,934.88</b>	<b>2,933.18</b>	<b>3,046.69</b>	<b>3,001.96</b>
<b>Total (excluding LULUCF)</b>	<b>2,593.76</b>	<b>2,541.03</b>	<b>2,665.91</b>	<b>2,700.17</b>	<b>2,888.14</b>	<b>2,897.85</b>	<b>2,991.95</b>	<b>2,992.04</b>	<b>3,105.56</b>	<b>3,060.82</b>

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
	kt CO <sub>2</sub> eq	kt CO <sub>2</sub> eq	kt CO <sub>2</sub> eq	kt CO <sub>2</sub> eq	kt CO <sub>2</sub> eq	kt CO <sub>2</sub> eq	kt CO <sub>2</sub> eq	kt CO <sub>2</sub> eq	kt CO <sub>2</sub> eq	kt CO <sub>2</sub> eq
1. Energy	2,363.35	2,360.56	2,480.70	2,500.77	2,680.35	2,634.63	2,722.43	2,689.09	2,775.93	2,734.83
2. Industrial Processes	75.80	10.11	17.27	30.61	42.43	90.34	89.92	112.80	130.90	131.66
3. Solvent and Other Product Use	2.72	3.01	2.33	2.56	2.38	2.37	2.26	2.03	2.71	2.10
4. Agriculture	91.27	102.95	98.77	97.94	91.10	95.65	93.58	93.36	95.23	86.45
5. Land Use, Land-Use Change and Forestry <sup>b</sup>	-55.91	-55.91	-55.91	-55.91	-57.00	-58.17	-57.08	-58.87	-58.86	-58.86
6. Waste	60.62	64.40	66.84	69.29	71.88	74.86	83.76	94.76	100.78	105.77
7. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Total (including LULUCF)</b>	<b>2,537.86</b>	<b>2,485.12</b>	<b>2,610.00</b>	<b>2,644.26</b>	<b>2,831.14</b>	<b>2,839.68</b>	<b>2,934.88</b>	<b>2,933.18</b>	<b>3,046.69</b>	<b>3,001.96</b>

Note: All footnotes for this table are given on sheet 3.

Table 1  
Emission trends: summary <sup>(1)</sup>  
(Sheet 3 of 3)

GREENHOUSE GAS EMISSIONS	2009	2010	2011	Change from base to latest reported year
	kt CO <sub>2</sub> eq	kt CO <sub>2</sub> eq	kt CO <sub>2</sub> eq	(%)
CO <sub>2</sub> emissions including net CO <sub>2</sub> from LULUCF	2,569.60	2,580.95	2,603.42	43.92
CO <sub>2</sub> emissions excluding net CO <sub>2</sub> from LULUCF	2,628.48	2,640.62	2,663.09	42.75
CH <sub>4</sub> emissions including CH <sub>4</sub> from LULUCF	167.21	175.38	167.36	83.69
CH <sub>4</sub> emissions excluding CH <sub>4</sub> from LULUCF	167.21	175.38	167.36	83.69
N <sub>2</sub> O emissions including N <sub>2</sub> O from LULUCF	54.35	51.90	50.42	0.97
N <sub>2</sub> O emissions excluding N <sub>2</sub> O from LULUCF	54.35	51.90	50.42	0.97
HFCs	120.34	121.61	132.18	100.00
PFCs	7.02	6.63	3.34	100.00
SF <sub>6</sub>	1.57	1.78	4.81	43,055.17
<b>Total (including LULUCF)</b>	<b>2,920.09</b>	<b>2,938.24</b>	<b>2,961.52</b>	<b>51.87</b>
<b>Total (excluding LULUCF)</b>	<b>2,978.96</b>	<b>2,997.92</b>	<b>3,021.19</b>	<b>50.57</b>

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2009	2010	2011	Change from base to latest reported year
	kt CO <sub>2</sub> eq	kt CO <sub>2</sub> eq	kt CO <sub>2</sub> eq	(%)
1. Energy	2,647.29	2,659.62	2,681.65	42.79
2. Industrial Processes	129.17	130.24	140.57	42,747.85
3. Solvent and Other Product Use	1.60	1.29	1.31	-47.30
4. Agriculture	83.26	78.04	70.90	-19.26
5. Land Use, Land-Use Change and Forestry <sup>b</sup>	-58.87	-59.67	-59.67	5.55
6. Waste	117.64	128.73	126.76	234.98
7. Other	NA	NA	NA	0.00
<b>Total (including LULUCF)</b>	<b>2,920.09</b>	<b>2,938.24</b>	<b>2,961.52</b>	<b>51.87</b>

Notes :

(1) Further detailed information could be found in the common reporting format tables of the Party's greenhouse gas inventory, namely "Emission trends (CO<sub>2</sub>)", "Emission trends (CH<sub>4</sub>)", "Emission trends (N<sub>2</sub>O)" and "Emission trends (HFCs, PFCs and SF<sub>6</sub>)", which is included in an annex to this biennial report.

(2) 2011 is the latest reported inventory year.

(3) 1 kt CO<sub>2</sub> eq equals 1 Gg CO<sub>2</sub> eq.

Abbreviation: LULUCF = land use, land-use change and forestry.

<sup>a</sup> 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 Conference of the Parties. For these Parties, this different base year is used to calculate the percentage change in the final column of this table.

<sup>b</sup> Includes net CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O from LULUCF.

Table 1 (a)  
Emission trends (CO<sub>2</sub>)  
(Sheet 1 of 3)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year <sup>a</sup>	1991	1992	1993	1994	1995	1996	1997	1998
	kt	kt	kt	kt	kt	kt	kt	kt	kt
<b>1. Energy</b>	1,864.82	2,040.11	2,144.93	2,140.85	2,252.00	2,210.95	2,263.31	2,253.18	2,257.16
<b>A. Fuel Combustion (Sectoral Approach)</b>	1,864.82	2,040.11	2,144.93	2,140.85	2,252.00	2,210.95	2,263.31	2,253.18	2,257.16
1. Energy Industries	1,367.03	1,511.60	1,596.46	1,571.82	1,660.76	1,605.78	1,633.08	1,625.27	1,639.82
2. Manufacturing Industries and Construction	39.27	62.42	58.97	58.16	57.44	59.86	62.46	57.32	41.26
3. Transport	342.39	362.37	386.68	407.63	424.41	437.41	460.04	471.50	478.59
4. Other Sectors	96.13	103.71	102.81	103.24	101.39	107.79	107.72	99.28	97.49
5. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>B. Fugitive Emissions from Fuels</b>	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO
1. Solid Fuels	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
2. Oil and Natural Gas	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO
<b>2. Industrial Processes</b>	0.32	0.52	0.15	0.19	0.49	1.71	1.52	1.72	1.13
<b>A. Mineral Products</b>	0.18	0.25	0.02	0.03	0.30	1.51	1.41	1.54	0.97
<b>B. Chemical Industry</b>	0.14	0.27	0.13	0.17	0.19	0.20	0.11	0.18	0.16
<b>C. Metal Production</b>	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
<b>D. Other Production</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>E. Production of Halocarbons and SF<sub>6</sub></b>									
<b>F. Consumption of Halocarbons and SF<sub>6</sub></b>									
<b>G. Other</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>J. Solvent and Other Product Use</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>4. Agriculture</b>									
<b>A. Enteric Fermentation</b>									
<b>B. Manure Management</b>									
<b>C. Rice Cultivation</b>									
<b>D. Agricultural Soils</b>									
<b>E. Prescribed Burning of Savannas</b>									
<b>F. Field Burning of Agricultural Residues</b>									
<b>G. Other</b>									
<b>5. Land Use, Land-Use Change and Forestry</b>	-56.54	-56.54	-56.54	-56.54	-56.54	-56.54	-56.54	-56.54	-56.54
<b>A. Forest Land</b>	-48.68	-48.68	-48.68	-48.68	-48.68	-48.68	-48.68	-48.68	-48.68
<b>B. Cropland</b>	-7.86	-7.86	-7.86	-7.86	-7.86	-7.86	-7.86	-7.86	-7.86
<b>C. Grassland</b>	NO	NO	NO	NO	NO	NO	NO	NO	NO
<b>D. Wetlands</b>	NO	NO	NO	NO	NO	NO	NO	NO	NO
<b>E. Settlements</b>	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
<b>F. Other Land</b>	NO	NO	NO	NO	NO	NO	NO	NO	NO
<b>G. Other</b>	NO	NO	NO	NO	NO	NO	NO	NO	NO
<b>6. Waste</b>	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.35
<b>A. Solid Waste Disposal on Land</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>B. Waste-water Handling</b>									
<b>C. Waste Incineration</b>	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.35
<b>D. Other</b>	NO	NO	NO	NA	NA	NA	NA	NA	NA
<b>7. Other (as specified in the summary table in CRF)</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Total CO<sub>2</sub> emissions including net CO<sub>2</sub> from LULUCF</b>	1,808.97	1,984.46	2,088.92	2,084.87	2,196.32	2,156.49	2,206.66	2,196.73	2,202.09
<b>Total CO<sub>2</sub> emissions excluding net CO<sub>2</sub> from LULUCF</b>	1,865.50	2,041.00	2,145.45	2,141.41	2,252.86	2,213.03	2,263.20	2,255.27	2,258.63
<b>Memo Items:</b>									
<b>International bunkers:</b>	469.06	497.33	675.40	825.60	790.09	824.10	1,037.53	1,271.22	957.52
<b>Aviation</b>	209.46	301.51	250.15	270.68	282.47	342.31	345.88	360.95	346.43
<b>Marine</b>	259.59	295.82	425.25	554.92	507.62	481.79	691.65	910.27	611.09
<b>Multilateral Operations:</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>CO<sub>2</sub> Emissions from Biomass:</b>	IE, NA, NE	IE, NA, NE	IE, NA, NE	IE, NA, NE	IE, NA, NE	IE, NA, NE	IE, NA, NE	IE, NA, NE	IE, NA, NE
	NO	NO	NO	NO	NO	NO	NO	NO	NO

Note: All footnotes for this table are given on sheet 3.

Table 1 (a)  
Emission trends (CO<sub>2</sub>)  
(Sheet 2 of 3)

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GREENHOUSE GAS SOURCE AND SINK CATEGORIES	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
	kt	kt	kt	kt	kt	kt	kt	kt	kt	kt
<b>1. Energy</b>	2,347.35	2,344.56	2,464.12	2,484.11	2,663.13	2,617.87	2,703.33	2,670.31	2,756.29	2,715.10
A. Fuel Combustion (Sectoral Approach)	2,347.35	2,344.56	2,464.12	2,484.11	2,663.13	2,617.87	2,703.33	2,670.31	2,756.29	2,715.10
1. Energy Industries	1,703.09	1,687.84	1,808.38	1,824.44	2,000.37	1,951.16	1,989.43	2,004.19	2,046.35	2,003.35
2. Manufacturing Industries and Construction	54.48	57.34	49.24	46.65	48.01	59.12	50.92	45.86	51.31	47.59
3. Transport	487.32	494.06	517.72	522.30	523.66	500.64	554.42	520.40	549.60	547.72
4. Other Sectors	102.46	105.32	88.77	90.72	91.09	106.95	106.57	99.86	109.02	116.45
5. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>B. Fugitive Emissions from Fuels</b>	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO
1. Solid Fuels	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
2. Oil and Natural Gas	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO
2. Industrial Processes	0.39	0.29	0.38	0.34	0.21	0.40	0.38	0.38	0.28	0.17
A. Mineral Products	0.28	0.22	0.21	0.20	0.14	0.28	0.17	0.31	0.20	0.12
B. Chemical Industry	0.11	0.07	0.16	0.14	0.08	0.13	0.21	0.08	0.08	0.05
C. Metal Production	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
D. Other Production	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E. Production of Halocarbons and SF6										
F. Consumption of Halocarbons and SF6										
G. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>3. Solvent and Other Product Use</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>4. Agriculture</b>										
A. Enteric Fermentation										
B. Manure Management										
C. Rice Cultivation										
D. Agricultural Soils										
E. Prescribed Burning of Savannas										
F. Field Burning of Agricultural Residues										
G. Other										
<b>5. Land Use, Land-Use Change and Forestry</b>	-55.91	-55.91	-55.91	-55.91	-57.00	-58.17	-57.08	-58.87	-58.86	-58.86
A. Forest Land	-48.68	-48.68	-48.68	-48.68	-48.68	-48.68	-48.68	-48.68	-48.68	-48.68
B. Cropland	-7.22	-7.22	-7.22	-7.22	-8.32	-9.49	-8.39	-10.18	-10.18	-10.18
C. Grassland	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
D. Wetlands	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
E. Settlements	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
F. Other Land	NE, NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
G. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
<b>6. Waste</b>	0.35	0.35	0.35	0.35	0.35	0.32	0.32	0.32	0.32	0.35
A. Solid Waste Disposal on Land	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B. Waste-water Handling										
C. Waste Incineration	0.35	0.35	0.35	0.35	0.35	0.32	0.32	0.32	0.32	0.35
D. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NO
<b>7. Other (as specified in the summary table in CRF)</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Total CO<sub>2</sub> emissions including net CO<sub>2</sub> from LULUCF</b>	2,292.18	2,289.28	2,408.93	2,428.89	2,606.68	2,560.42	2,646.95	2,612.14	2,698.03	2,656.76
<b>Total CO<sub>2</sub> emissions excluding net CO<sub>2</sub> from LULUCF</b>	2,348.08	2,345.19	2,464.84	2,484.80	2,663.68	2,618.59	2,704.03	2,671.01	2,756.89	2,715.63
<b>Memo Items:</b>										
<b>International Bunkers:</b>										
Air aviation	1,279.25	1,579.58	2,624.86	2,654.72	3,217.16	3,426.19	4,040.18	1,866.52	4,133.17	3,372.29
Sea aviation	359.17	344.09	291.92	269.44	266.76	270.61	275.29	281.54	296.84	300.50
Marine	920.08	1,235.48	2,332.95	2,385.27	2,950.40	3,155.58	3,764.89	1,584.99	3,836.33	3,071.79
<b>Multilateral Operations:</b>										
CO <sub>2</sub> Emissions from Biomass	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	IE, NA, NE, NO	IE, NA, NE, NO	IE, NA, NE, NO	IE, NA, NE, NO	0.07	0.15	3.15	5.12	6.35	4.41

Note: All footnotes for this table are given on sheet 3.

Table 1(a)  
Emission trends (CO<sub>2</sub>)  
(Sheet 3 of 3)

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GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2009	2010	2011	Change from base to latest reported year
	kt	kt	kt	%
<b>1. Energy</b>	2,627.76	2,639.87	2,662.16	42.76
A. Fuel Combustion (Sectoral Approach)	2,627.76	2,639.87	2,662.16	42.76
1. Energy Industries	1,897.03	1,887.17	1,931.48	41.29
2. Manufacturing Industries and Construction	40.42	46.04	72.77	22.77
3. Transport	561.81	583.42	553.28	61.59
4. Other Sectors	118.50	133.24	104.63	8.84
5. Other	NA	NA	NA	0.00
B. Fugitive Emissions from Fuels	NA, NE	NA, NE	NA, NE	0.00
1. Solid Fuels	NA, NO	NA, NO	NA, NO	0.00
2. Oil and Natural Gas	NA, NE	NA, NE	NA, NE	0.00
2. Industrial Processes	0.24	0.23	0.25	-21.80
A. Mineral Products	0.16	0.15	0.15	-20.05
B. Chemical Industry	0.08	0.08	0.10	-23.68
C. Metal Production	NA, NO	NA, NO	NA, NO	0.00
D. Other Production	NA	NA	NA	0.00
E. Production of Halocarbons and SF <sub>6</sub>				
F. Consumption of Halocarbons and SF <sub>6</sub>				
G. Other	NA	NA	NA	0.00
J. Solvent and Other Product Use	NA	NA	NA	0.00
<b>4. Agriculture</b>				
A. Enteric Fermentation				
B. Manure Management				
C. Rice Cultivation				
D. Agricultural Soils				
E. Prescribed Burning of Savannas				
F. Field Burning of Agricultural Residues				
G. Other				
<b>5. Land Use, Land-Use Change and Forestry</b>	-58.87	-59.67	-59.67	5.55
A. Forest Land	-48.69	-48.69	-48.69	0.02
B. Cropland	-10.18	-10.98	-10.98	39.78
C. Grassland	NO	NO	NO	0.00
D. Wetlands	NO	NO	NO	0.00
E. Settlements	NE, NO	NE, NO	NE, NO	0.00
F. Other Land	NO	NO	NO	0.00
G. Other	NO	NO	NO	0.00
<b>6. Waste</b>	0.47	0.52	0.69	85.43
A. Solid Waste Disposal on Land	NA	NA	NA	0.00
B. Waste-water Handling				
C. Waste Incineration	0.47	0.52	0.69	85.43
D. Other	NO	NO	NO	0.00
<b>7. Other (as specified in the summary table in CRF)</b>	NA	NA	NA	0.00
Total CO <sub>2</sub> emissions including net CO <sub>2</sub> from LULUCF	2,569.80	2,580.95	2,603.42	43.92
Total CO <sub>2</sub> emissions excluding net CO <sub>2</sub> from LULUCF	2,628.48	2,640.62	2,663.09	42.75
<b>Memo Items:</b>				
International Bunkers	4,291.60	3,642.34	4,578.09	876.02
Aviation	284.34	318.43	330.77	57.91
Marine	4,007.26	3,323.90	4,247.32	1,536.15
Multilateral Operations	NA	NA	NA	0.00
CO <sub>2</sub> Emissions from Biomass	5.00	4.88	3.03	100.00

Abbreviations: CRF = common reporting format, LULUCF = land use, land-use change and forestry

\* 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 Conference of the Parties. For these Parties, this different base year is used to calculate the percentage change in the final column of this table.

<sup>†</sup> Fill in net emissions/removals as reported in CRF table Summary 1.A of the latest reported inventory year. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).



Table 1(b)  
Emission trends (CH<sub>4</sub>)  
(Sheet 1 of 3)

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GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year <sup>a</sup>	1991	1992	1993	1994	1995	1996	1997	1998
	kt	kt	kt	kt	kt	kt	kt	kt	kt
<b>1. Energy</b>	0.14	0.16	0.17	0.17	0.18	0.19	0.20	0.20	0.20
A. Fuel Combustion (Sectoral Approach)	0.14	0.16	0.17	0.17	0.18	0.19	0.20	0.20	0.20
1. Energy Industries	0.04	0.04	0.05	0.04	0.05	0.06	0.06	0.06	0.06
2. Manufacturing Industries and Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3. Transport	0.10	0.10	0.11	0.11	0.12	0.12	0.12	0.13	0.12
4. Other Sectors	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
5. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>B. Fugitive Emissions from Fuels</b>	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO
1. Solid Fuels	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
2. Oil and Natural Gas	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO
<b>2. Industrial Processes</b>	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
A. Mineral Products	NO	NO	NO	NO	NO	NO	NO	NO	NO
B. Chemical Industry	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
C. Metal Production	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
D. Other Production									
E. Production of Halocarbons and SF <sub>6</sub>									
F. Consumption of Halocarbons and SF <sub>6</sub>									
G. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>3. Solvent and Other Product Use</b>									
4. Agriculture	2.97	2.88	2.91	2.95	2.91	2.98	3.01	3.08	2.99
A. Enteric Fermentation	1.60	1.59	1.61	1.62	1.61	1.70	1.68	1.70	1.67
B. Manure Management	1.36	1.28	1.30	1.33	1.31	1.28	1.33	1.38	1.32
C. Rice Cultivation	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
D. Agricultural Soils	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE
E. Prescribed Burning of Savannas	NA	NA	NA	NA	NA	NA	NA	NA	NA
F. Field Burning of Agricultural Residues	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
G. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>5. Land Use, Land-Use Change and Forestry</b>	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
A. Forest Land	NO	NO	NO	NO	NO	NO	NO	NO	NO
B. Cropland	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
C. Grassland	NO	NO	NO	NO	NO	NO	NO	NO	NO
D. Wetlands	NO	NO	NO	NO	NO	NO	NO	NO	NO
E. Settlements	NO	NO	NO	NO	NO	NO	NO	NO	NO
F. Other Land	NO	NO	NO	NO	NO	NO	NO	NO	NO
G. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO
<b>6. Waste</b>	1.22	1.32	1.41	1.55	1.71	1.81	1.88	1.98	2.15
A. Solid Waste Disposal on Land	0.66	0.75	0.84	0.93	1.03	1.13	1.23	1.33	1.45
B. Waste-water Handling	0.56	0.56	0.57	0.58	0.59	0.59	0.59	0.61	0.60
C. Waste Incineration	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
D. Other	NO	NO	NO	0.04	0.09	0.09	0.06	0.04	0.09
<b>7. Other (as specified in the summary table in CRF)</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Total CH<sub>4</sub> emissions including CH<sub>4</sub> from LULUCF</b>	4.34	4.35	4.49	4.67	4.80	4.99	5.09	5.26	5.34
<b>Total CH<sub>4</sub> emissions excluding CH<sub>4</sub> from LULUCF</b>	4.34	4.35	4.49	4.67	4.80	4.99	5.09	5.26	5.34
<b>Memo Items:</b>									
<b>International Bunkers</b>	0.03	0.03	0.04	0.05	0.05	0.05	0.07	0.09	0.06
Aviation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Marine	0.02	0.03	0.04	0.05	0.05	0.04	0.06	0.08	0.06
<b>Multilateral Operations</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>CO<sub>2</sub> Emissions from Biomass</b>									

Note: All footnotes for this table are given on sheet 3.

Table 1(b)  
Emission trends (CH<sub>4</sub>)  
(Sheet 2 of 3)

MLT\_BR1\_v0.1

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
	kt	kt	kt	kt	kt	kt	kt	kt	kt	kt
<b>1. Energy</b>	0.20	0.20	0.20	0.20	0.20	0.20	0.21	0.21	0.22	0.22
A. Fuel Combustion (Sectoral Approach)	0.20	0.20	0.20	0.20	0.20	0.20	0.21	0.21	0.22	0.22
1. Energy Industries	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.08
2. Manufacturing Industries and Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3. Transport	0.12	0.12	0.12	0.11	0.11	0.11	0.12	0.12	0.12	0.12
4. Other Sectors	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02
5. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>B. Fugitive Emissions from Fuels</b>	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO
1. Solid Fuels	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
2. Oil and Natural Gas	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO
<b>2. Industrial Processes</b>	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
A. Mineral Products	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
B. Chemical Industry	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
C. Metal Production	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
D. Other Production										
E. Production of Halocarbons and SF <sub>6</sub>										
F. Consumption of Halocarbons and SF <sub>6</sub>										
G. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>3. Solvent and Other Product Use</b>										
4. Agriculture	3.00	3.38	3.30	3.27	3.11	3.27	3.19	3.11	3.21	2.94
A. Enteric Fermentation	1.66	1.79	1.72	1.73	1.67	1.75	1.74	1.67	1.71	1.61
B. Manure Management	1.34	1.58	1.58	1.54	1.45	1.52	1.45	1.44	1.49	1.34
C. Rice Cultivation	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
D. Agricultural Soils	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE
E. Prescribed Burning of Savannas	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
F. Field Burning of Agricultural Residues	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
G. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>5. Land Use, Land-Use Change and Forestry</b>	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
A. Forest Land	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
B. Cropland	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
C. Grassland	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
D. Wetlands	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
E. Settlements	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
F. Other Land	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
G. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
<b>6. Waste</b>	2.21	2.38	2.48	2.57	2.72	2.85	3.27	3.76	4.14	4.36
A. Solid Waste Disposal on Land	1.58	1.71	1.82	1.94	2.07	2.19	2.60	3.08	3.53	3.79
B. Waste-water Handling	0.58	0.61	0.58	0.59	0.59	0.60	0.60	0.60	0.61	0.57
C. Waste Incineration	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
D. Other	0.05	0.06	0.07	0.04	0.06	0.06	0.06	0.08	NO	NO
7. Other (as specified in the summary table in CRF)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Total CH<sub>4</sub> emissions including CH<sub>4</sub> from LULUCF</b>	5.42	5.95	5.98	6.04	6.04	6.33	6.66	7.08	7.56	7.52
<b>Total CH<sub>4</sub> emissions excluding CH<sub>4</sub> from LULUCF</b>	5.42	5.95	5.98	6.04	6.04	6.33	6.66	7.08	7.56	7.52
<b>Memo Items:</b>										
International Bankers	0.09	0.12	0.21	0.22	0.27	0.29	0.34	0.15	0.35	0.28
Aviation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Marine	0.08	0.11	0.21	0.22	0.27	0.29	0.34	0.15	0.35	0.28
Multilateral Operations	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>CO<sub>2</sub> Emissions from Biomass</b>										

Note: All footnotes for this table are given on sheet 3.

Table 1(b)  
Emission trends (CH<sub>4</sub>)  
(Sheet 3 of 3)

MLT\_BR1\_v0.1

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2009	2010	2011	Change from base to latest reported year
	kt	kt	kt	%
<b>1. Energy</b>	0.22	0.22	0.22	53.43
A. Fuel Combustion (Sectoral Approach)	0.22	0.22	0.22	53.43
1. Energy Industries	0.07	0.07	0.08	111.35
2. Manufacturing Industries and Construction	0.00	0.00	0.00	21.98
3. Transport	0.13	0.13	0.13	31.17
4. Other Sectors	0.02	0.02	0.02	66.59
5. Other	NA	NA	NA	0.00
<b>B. Fugitive Emissions from Fuels</b>	NA, NE, NO	NA, NE, NO	NA, NE, NO	0.00
1. Solid Fuels	NA, NO	NA, NO	NA, NO	0.00
2. Oil and Natural Gas	NA, NE, NO	NA, NE, NO	NA, NE, NO	0.00
<b>2. Industrial Processes</b>	NA, NO	NA, NO	NA, NO	0.00
A. Mineral Products	NO	NO	NO	0.00
B. Chemical Industry	NA, NO	NA, NO	NA, NO	0.00
C. Metal Production	NA, NO	NA, NO	NA, NO	0.00
D. Other Production				
E. Production of Halocarbons and SF <sub>6</sub>				
F. Consumption of Halocarbons and SF <sub>6</sub>				
G. Other	NA	NA	NA	0.00
<b>3. Solvent and Other Product Use</b>				
<b>4. Agriculture</b>	2.82	2.69	2.41	-18.94
A. Enteric Fermentation	1.52	1.41	1.37	-14.68
B. Manure Management	1.30	1.28	1.04	-23.96
C. Rice Cultivation	NA, NO	NA, NO	NA, NO	0.00
D. Agricultural Soils	NA, NE	NA, NE	NA, NE	0.00
E. Prescribed Burning of Savannas	NA	NA	NA	0.00
F. Field Burning of Agricultural Residues	NA, NO	NA, NO	NA, NO	0.00
G. Other	NA	NA	NA	0.00
<b>5. Land Use, Land-Use Change and Forestry</b>	NE, NO	NE, NO	NE, NO	0.00
A. Forest Land	NO	NO	NO	0.00
B. Cropland	NE, NO	NE, NO	NE, NO	0.00
C. Grassland	NO	NO	NO	0.00
D. Wetlands	NO	NO	NO	0.00
E. Settlements	NO	NO	NO	0.00
F. Other Land	NO	NO	NO	0.00
G. Other	NO	NO	NO	0.00
<b>6. Waste</b>	4.92	5.44	5.34	336.29
A. Solid Waste Disposal on Land	4.42	4.90	5.20	683.00
B. Waste-water Handling	0.50	0.54	0.14	-74.65
C. Waste Incineration	0.00	0.00	0.00	-99.92
D. Other	NO	NO	NO	0.00
<b>7. Other (as specified in the summary table in CRF)</b>	NA	NA	NA	0.00
<b>Total CH<sub>4</sub> emissions including CH<sub>4</sub> from LULUCF</b>	7.96	8.35	7.97	83.69
<b>Total CH<sub>4</sub> emissions excluding CH<sub>4</sub> from LULUCF</b>	7.96	8.35	7.97	83.69
<b>Memo Item:</b>				
International Bankers	0.37	0.31	0.39	1,439.49
Aviation	0.00	0.00	0.00	57.91
Marine	0.37	0.30	0.39	1,524.40
Multilateral Operations	NA	NA	NA	0.00
CO <sub>2</sub> Emissions from Biomass				

Abbreviations: CRF = common reporting format, LULUCF = land use, land-use change and fo  
 \* 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 Conference of the Parties. For these Parties, this different base year is used to calculate the percentage change in the final column of this table.



Table 1(c)  
Emission trends (N<sub>2</sub>O)  
(Sheet 1 of 3)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year*	1991	1992	1993	1994	1995	1996	1997	1998
	kt	kt	kt	kt	kt	kt	kt	kt	kt
<b>1. Energy</b>	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
A. Fuel Combustion (Sectoral Approach)	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
1. Energy Industries	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01
2. Manufacturing Industries and Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3. Transport	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
4. Other Sectors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA
B. Fugitive Emissions from Fuels	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
1. Solid Fuels	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
2. Oil and Natural Gas	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
2. Industrial Processes	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
A. Mineral Products	NO	NO	NO	NO	NO	NO	NO	NO	NO
B. Chemical Industry	NO	NO	NO	NO	NO	NO	NO	NO	NO
C. Metal Production	NA	NA	NA	NA	NA	NA	NA	NA	NA
D. Other Production									
E. Production of Halocarbons and SF <sub>6</sub>									
F. Consumption of Halocarbons and SF <sub>6</sub>									
G. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA
3. Solvents and Other Product Use	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
4. Agriculture	0.08	0.08	0.08	0.08	0.08	0.10	0.09	0.09	0.11
A. Enteric Fermentation									
B. Manure Management	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01
C. Rice Cultivation									
D. Agricultural Soils	0.07	0.07	0.07	0.07	0.07	0.09	0.07	0.08	0.09
E. Prescribed Burning of Savannas	NA	NA	NA	NA	NA	NA	NA	NA	NA
F. Field Burning of Agricultural Residues	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
G. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA
5. Land Use, Land-Use Change and Forestry	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
A. Forest Land	NO	NO	NO	NO	NO	NO	NO	NO	NO
B. Cropland	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
C. Grassland	NO	NO	NO	NO	NO	NO	NO	NO	NO
D. Wetlands	NO	NO	NO	NO	NO	NO	NO	NO	NO
E. Settlements	NO	NO	NO	NO	NO	NO	NO	NO	NO
F. Other Land	NO	NO	NO	NO	NO	NO	NO	NO	NO
G. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO
6. Waste	0.04	0.04	0.04	0.04	0.05	0.05	0.04	0.04	0.05
A. Solid Waste Disposal on Land									
B. Waste-water Handling	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
C. Waste Incineration	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
D. Other	NO	NO	NO	NO	0.01	0.01	0.00	0.00	0.01
7. Other (as specified in the summary table in CRF)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total N <sub>2</sub> O emission: including N <sub>2</sub> O from LULUCF	0.16	0.16	0.17	0.17	0.18	0.19	0.18	0.18	0.20
Total N <sub>2</sub> O emission: excluding N <sub>2</sub> O from LULUCF	0.16	0.16	0.17	0.17	0.18	0.19	0.18	0.18	0.20
Memo Item:									
International bunkers:	0.01	0.01	0.02	0.02	0.02	0.02	0.03	0.03	0.03
Aviation	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Marine	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02
Multilateral Operations:	NA	NA	NA	NA	NA	NA	NA	NA	NA
CO <sub>2</sub> Emission: from Biomass:									

Note: All footnotes for this table are given on sheet 3.

Table 1(c)  
Emission trends (N<sub>2</sub>O)  
(Sheet 2 of 3)

MLT\_BR1\_v0.1

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
	kt	kt	kt	kt	kt	kt	kt	kt	kt	kt
<b>I. Energy</b>	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05
A. Fuel Combustion (Sectoral Approach)	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05
1. Energy Industries	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02
2. Manufacturing Industries and Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3. Transport	0.02	0.02	0.03	0.03	0.03	0.02	0.03	0.03	0.03	0.03
4. Other Sectors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B. Fugitive Emissions from Fuels	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
1. Solid Fuels	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
2. Oil and Natural Gas	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
2. Industrial Processes	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
A. Mineral Products	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
B. Chemical Industry	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
C. Metal Production	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
D. Other Production										
E. Production of Halocarbons and SF <sub>6</sub>										
F. Consumption of Halocarbons and SF <sub>6</sub>										
G. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
J. Solvent and Other Product Use	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
4. Agriculture	0.09	0.10	0.10	0.09	0.08	0.09	0.09	0.09	0.09	0.08
A. Enteric Fermentation										
B. Manure Management	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
C. Rice Cultivation										
D. Agricultural Soils	0.08	0.09	0.08	0.08	0.07	0.07	0.07	0.07	0.07	0.06
E. Prescribed Burning of Savannas	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
F. Field Burning of Agricultural Residues	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
G. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5. Land Use, Land-Use Change and Forestry	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
A. Forest Land	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
B. Cropland	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
C. Grassland	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
D. Wetlands	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
E. Settlements	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
F. Other Land	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
G. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
6. Waste	0.04	0.05	0.05	0.04	0.05	0.05	0.05	0.05	0.04	0.04
A. Solid Waste Disposal on Land										
B. Waste-water Handling	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
C. Waste Incineration	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
D. Other	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	NO
7. Other (as specified in the summary table in CRF)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total N <sub>2</sub> O emissions including N <sub>2</sub> O from LULUCF	0.18	0.20	0.19	0.19	0.18	0.18	0.19	0.19	0.19	0.18
Total N <sub>2</sub> O emissions excluding N <sub>2</sub> O from LULUCF	0.18	0.20	0.19	0.19	0.18	0.18	0.19	0.19	0.19	0.18
Memo Items:										
International Bunkers:	0.03	0.04	0.07	0.07	0.08	0.09	0.11	0.05	0.11	0.09
Aviation	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Marine	0.02	0.03	0.06	0.06	0.08	0.08	0.10	0.04	0.10	0.08
Multilateral Operations	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CO <sub>2</sub> Emissions from Biomass										

Note: All footnotes for this table are given on sheet 3.

Table 1(c)  
Emission trends (N<sub>2</sub>O)  
(Sheet 3 of 3)

MLT\_BR1\_v0.1

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2009	2010	2011	Change from base to latest reported year
	kt	kt	kt	%
<b>1. Energy</b>	0.05	0.05	0.05	44.80
A. Fuel Combustion (Sectoral Approach)	0.05	0.05	0.05	44.80
1. Energy Industries	0.01	0.01	0.02	-3.57
2. Manufacturing Industries and Construction	0.00	0.00	0.00	22.51
3. Transport	0.03	0.03	0.03	92.75
4. Other Sectors	0.00	0.00	0.00	1.85
5. Other	NA	NA	NA	0.00
B. Fugitive Emissions from Fuels	NA, NO	NA, NO	NA, NO	0.00
1. Solid Fuels	NA, NO	NA, NO	NA, NO	0.00
2. Oil and Natural Gas	NA, NO	NA, NO	NA, NO	0.00
2. Industrial Processes	NA, NO	NA, NO	NA, NO	0.00
A. Mineral Products	NO	NO	NO	0.00
B. Chemical Industry	NO	NO	NO	0.00
C. Metal Production	NA	NA	NA	0.00
D. Other Production				
E. Production of Halocarbons and SF <sub>6</sub>				
F. Consumption of Halocarbons and SF <sub>6</sub>				
G. Other	NA	NA	NA	0.00
3. Solvent and Other Product Use	0.01	0.00	0.00	-47.30
4. Agriculture	0.08	0.07	0.07	-20.03
A. Enteric Fermentation				
B. Manure Management	0.01	0.01	0.01	-20.33
C. Rice Cultivation				
D. Agricultural Soils	0.06	0.06	0.05	-19.97
E. Prescribed Burning of Savannas	NA	NA	NA	0.00
F. Field Burning of Agricultural Residues	NA, NO	NA, NO	NA, NO	0.00
G. Other	NA	NA	NA	0.00
5. Land Use, Land-Use Change and Forestry	NE, NO	NE, NO	NE, NO	0.00
A. Forest Land	NO	NO	NO	0.00
B. Cropland	NE, NO	NE, NO	NE, NO	0.00
C. Grassland	NO	NO	NO	0.00
D. Wetlands	NO	NO	NO	0.00
E. Settlements	NO	NO	NO	0.00
F. Other Land	NO	NO	NO	0.00
G. Other	NO	NO	NO	0.00
6. Waste	0.04	0.05	0.04	18.38
A. Solid Waste Disposal on Land				
B. Waste-water Handling	0.04	0.04	0.04	16.98
C. Waste Incineration	0.00	0.00	0.00	575.62
D. Other	NO	NO	NO	0.00
7. Other (as specified in the summary table in CRF)	NA	NA	NA	0.00
Total N <sub>2</sub> O emissions including N <sub>2</sub> O from LULUCF	0.18	0.17	0.16	0.97
Total N <sub>2</sub> O emissions excluding N <sub>2</sub> O from LULUCF	0.18	0.17	0.16	0.97
<b>Memo Items:</b>				
International Bunkers	0.11	0.10	0.12	846.15
Aviation	0.01	0.01	0.01	57.91
Marine	0.10	0.09	0.11	1,524.37
Multilateral Operations	NA	NA	NA	0.00
CO <sub>2</sub> Emissions from Biomass				

Abbreviations: CRF = common reporting format, LULUCF = land use, land-use change and forestry  
 \* 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 Conference of the Parties. For these Parties, this different base year is used to calculate the percentage change in the final column of this table.

Table 1(d)  
Emission trends (HFCs, PFCs and SF<sub>6</sub>)  
(Sheet 1 of 3)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year <sup>a</sup>	1991	1992	1993	1994	1995	1996	1997	1998
	kt	kt	kt	kt	kt	kt	kt	kt	kt
<b>Emissions of HFC<sub>3c</sub> - (kt CO<sub>2</sub> eq)</b>	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	73.87	73.87
HFC-23	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
HFC-32	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
HFC-41	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
HFC-43-10mee	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
HFC-125	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
HFC-134	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
HFC-134a	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
HFC-152a	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
HFC-143	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
HFC-143a	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
HFC-227ea	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
HFC-236fa	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
HFC-245ea	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
Unspecified mix of listed HFC <sub>3d</sub> - (kt CO <sub>2</sub> eq)	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
<b>Emissions of PFC<sub>3c</sub> - (kt CO<sub>2</sub> eq)</b>	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO
CF <sub>4</sub>	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
C <sub>2</sub> F <sub>6</sub>	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
C <sub>3</sub> F <sub>8</sub>	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
C <sub>4</sub> F <sub>10</sub>	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
c-C <sub>4</sub> F <sub>8</sub>	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
C <sub>5</sub> F <sub>12</sub>	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
C <sub>6</sub> F <sub>14</sub>	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
Unspecified mix of listed PFC <sub>3(4)</sub> - (Gg CO <sub>2</sub> equivalent)	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
<b>Emissions of SF<sub>6</sub>(3) - (Gg CO<sub>2</sub> equivalent)</b>	0.01	0.01	1.50	1.50	1.50	1.51	1.52	1.52	1.54
SF <sub>6</sub>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: All footnotes for this table are given on sheet 3.



Table 1(d)  
**Emission trends (HFCs, PFCs and SF<sub>6</sub>)**  
 (Sheet 2 of 3)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
	kt	kt	kt	kt	kt	kt	kt	kt	kt	kt
<b>Emissions of HFCsc - (kt CO<sub>2</sub> eq)</b>	73.87	8.29	15.33	28.70	40.06	60.42	64.51	87.50	106.15	116.73
HFC-23	NA, NO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HFC-32	NA, NO	NA, NO	NA, NO	0.00	0.00	0.00	0.00	0.01	0.01	0.01
HFC-41	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
HFC-43-10mee	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
HFC-125	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	0.00	0.00	0.01	0.01	0.01
HFC-134	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
HFC-134a	NA, NO	0.01	0.01	0.02	0.02	0.03	0.03	0.03	0.03	0.04
HFC-152a	NA, NO	NA, NO	NA, NO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HFC-143	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
HFC-143a	NA, NO	NA, NO	NA, NO	0.00	0.00	0.00	0.00	0.01	0.01	0.01
HFC-227ea	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	0.00	NA, NO	0.00	0.00	0.00
HFC-236fa	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
HFC-245ca	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
Unspecified mix of listed HFCsd - (kt CO <sub>2</sub> eq)	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	0.81	3.25	3.25
<b>Emissions of PFCsc - (kt CO<sub>2</sub> eq)</b>	NA, NE, NO	0.00	0.00	0.00	0.00	27.90	23.39	23.27	22.81	12.93
CF <sub>4</sub>	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
C <sub>2</sub> F <sub>6</sub>	NA, NO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C <sub>3</sub> F <sub>8</sub>	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	0.00	0.00
C <sub>4</sub> F <sub>10</sub>	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
c-C <sub>4</sub> F <sub>8</sub>	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
C <sub>3</sub> F <sub>12</sub>	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
C <sub>6</sub> F <sub>14</sub>	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
Unspecified mix of listed PFCs(4) - (Gg CO <sub>2</sub> equivalent)	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	27.90	23.39	23.27	22.81	12.93
<b>Emissions of SF<sub>6</sub>(3) - (Gg CO<sub>2</sub> equivalent)</b>	1.54	1.54	1.56	1.57	2.16	1.62	1.64	1.65	1.66	1.83
SF <sub>6</sub>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: All footnotes for this table are given on sheet 3.

Table 1(d)

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**Emission trends (HFCs, PFCs and SF<sub>6</sub>)**  
(Sheet 3 of 3)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2009	2010	2011	Change from base to latest reported year
	kt	kt	kt	%
<b>Emissions of HFCsc - (kt CO<sub>2</sub> eq)</b>	120.34	121.61	132.18	100.00
HFC-23	0.00	0.00	0.00	100.00
HFC-32	0.01	0.01	0.01	100.00
HFC-41	NA, NO	NA, NO	NA, NO	0.00
HFC-43-10mee	NA, NO	NA, NO	NA, NO	0.00
HFC-125	0.01	0.01	0.01	100.00
HFC-134	NA, NO	NA, NO	NA, NO	0.00
HFC-134a	0.04	0.04	0.04	100.00
HFC-152a	0.00	0.00	0.00	100.00
HFC-143	NA, NO	NA, NO	NA, NO	0.00
HFC-143a	0.01	0.01	0.01	100.00
HFC-227ea	0.00	0.00	0.00	100.00
HFC-236fa	NA, NO	NA, NO	NA, NO	0.00
HFC-245ca	NA, NO	NA, NO	NA, NO	0.00
Unspecified mix of listed HFCsd - (kt CO <sub>2</sub> eq)	1.62	NA, NO	3.39	100.00
<b>Emissions of PFCsc - (kt CO<sub>2</sub> eq)</b>	7.02	6.63	3.34	100.00
CF <sub>4</sub>	NA, NO	NA, NO	NA, NO	0.00
C <sub>2</sub> F <sub>6</sub>	0.00	0.00	0.00	100.00
C <sub>3</sub> F <sub>8</sub>	0.00	0.00	0.00	100.00
C <sub>4</sub> F <sub>10</sub>	NA, NO	NA, NO	NA, NO	0.00
c-C <sub>4</sub> F <sub>8</sub>	NA, NO	NA, NO	NA, NO	0.00
C <sub>2</sub> F <sub>12</sub>	NA, NO	NA, NO	NA, NO	0.00
C <sub>6</sub> F <sub>14</sub>	NA, NO	NA, NO	NA, NO	0.00
Unspecified mix of listed PFCs(4) - (Gg CO <sub>2</sub> equivalent)	7.02	6.63	3.34	100.00
<b>Emissions of SF<sub>6</sub>(3) - (Gg CO<sub>2</sub> equivalent)</b>	1.57	1.78	4.81	43,055.17
SF <sub>6</sub>	0.00	0.00	0.00	43,055.17

Abbreviations : CRF = common reporting format, LULUCF = land use, land-use change and forestry.

<sup>a</sup> 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 Conference of the Parties. For these Parties, this different base year is used to calculate the percentage change in the final column of this table.

<sup>b</sup> Enter actual emissions estimates. If only potential emissions estimates are available, these should be reported in this table and an indication for this be provided in the documentation box. Only in these rows are the emissions expressed as CO<sub>2</sub> equivalent emissions.

<sup>c</sup> In accordance with the "Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual inventories", 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<sub>2</sub> equivalent and that appropriate notation keys should be entered in the cells for the individual chemicals.)



### III. Quantified Economy-wide Emission Reduction Target

**Refer to Chapter 1, section 1.4 of the National Communication, 2014, for more detailed information.**

For the first commitment period (CP1; 2008-2012) under the Kyoto Protocol, Malta did not have a quantified emission limitation or reduction target. This situation was maintained even when its status under the Convention changed to that of Annex I Party in 2010.

However, in spite of the situation of the country vis-a-vis the Convention and the Protocol, as of 2005, a large share of national greenhouse gas emissions, namely CO<sub>2</sub> emissions from the two power generation plants, became subject to compliance with the European Union Emissions Trading Scheme (EU ETS) Directive<sup>4</sup>, including the surrender of allowances in respect of reported emissions.

With the further development of European Union greenhouse gas emission mitigation policy, all other emissions of greenhouse gases (except for emissions from source category civil aviation and emissions and removals from sector LULUCF) are, for the period 2013 to 2020, subject to the quantified emission limitation target inscribed for Malta in the Effort-Sharing Decision (ESD)<sup>5</sup>. The emissions limit for Malta under the ESD is set at 5% over 2005 emission levels, in 2020, with interim binding targets for the years 2013-2019 determined on the basis of a linear trajectory starting in 2013 at a level equivalent to the average of covered emissions from 2008, 2009 and 2011, and ending at the emission level for 2020 as determined in accordance with the +5% limit for 2020.

The accession to Annex I status meant that Malta is now inscribed in the list of Parties to the Kyoto Protocol that intend to take on a quantified emission limitation or reduction commitment for the second commitment period of the Protocol (CP2; 2013-2020). The Doha Amendments to the Protocol<sup>6</sup> include a target of -20% by 2020, compared to 1990 emission levels, for Malta. This covers the six greenhouse gases already mentioned in section 1 of this report, and in addition, nitrogen trifluoride (NF<sub>3</sub>).

It is the intention of the EU and its Member States to jointly fulfil the commitments set out in the Doha Amendments<sup>7</sup>. To this effect, the sharing of emission mitigation effort as expressed in particular through EU legislation such as the EU ETS and the ESD remains the primary emission limitation roadmap for Malta until 2020.

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<sup>4</sup> Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC; OJ L 275, 25.10.2003, pg. 32.

<sup>5</sup> Decision 406/2009/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020; OJ L 140, 5.6.2009, pg. 136.

<sup>6</sup> The Doha Amendments were adopted by Parties to the Kyoto Protocol through Decision 1/CMP.8 at the eighth session of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol held in Doha, Qatar, in December 2012.

<sup>7</sup> Footnote 4 to the table in part A of the Doha Amendments states that: *"The QELRCs for the European Union and its member States for a second commitment period under the Kyoto Protocol are based on the understanding that these will be fulfilled jointly with the European Union and its member States, in accordance with Article 4 of the Kyoto Protocol. The QELRCs are without prejudice to the subsequent notification by the European Union and its member States of an agreement to fulfil their commitments jointly in accordance with the provisions of the Kyoto Protocol."*



**CTF Tables reproduced in this section:**

Table 2(a)	Description of quantified economy-wide emission reduction target: base year;
Table 2(b)	Description of quantified economy-wide emission reduction target: gases and sectors covered;
Table 2(c)	Description of quantified economy-wide emission reduction target: global warming potential values (GWP);
Table 2(d)	Description of quantified economy-wide emission reduction target: approaching to counting emissions and removals from the LULUCF sector.

NOTE: Malta has not yet determined the potential participation in, and use of, market-based measures under the UNFCCC, or other market-based measures, in respect of the Kyoto Protocol CP2. CTF Table 2(e) is thus not reproduced here.

Table 2(a)

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**Description of quantified economy-wide emission reduction target: base year<sup>a</sup>**

<i>Party</i>	<i>Malta</i>	
Base year /base period	1990	
Emission reduction target	% of base year/base period	% of 1990 <sup>b</sup>
	20.00	
Period for reaching target	BY-2020	

<sup>a</sup> Reporting by a developed country Party on the information specified in the common tabular format does not prejudice 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.

<sup>b</sup> Optional.

**Table 2(b)**  
**Description of quantified economy-wide emission reduction target: gases and sectors covered<sup>a</sup>**

<i>Gases covered</i>		<i>Base year for each gas (year):</i>
CO <sub>2</sub>		1990
CH <sub>4</sub>		1990
N <sub>2</sub> O		1990
HFCs		1990
PFCs		1990
SF <sub>6</sub>		1990
NF <sub>3</sub>		1990
Other Gases (specify)		
Sectors covered <sup>b</sup>	Energy	Yes
	Transport <sup>f</sup>	Yes
	Industrial processes <sup>g</sup>	Yes
	Agriculture	Yes
	LULUCF	Yes
	Waste	Yes
	Other Sectors (specify)	

*Abbreviations* : LULUCF = land use, land-use change and forestry.

<sup>a</sup> Reporting by a developed country Party on the information specified in the common tabular format does not prejudice 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.

<sup>b</sup> 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.

<sup>f</sup> Transport is reported as a subsector of the energy sector.

<sup>g</sup> Industrial processes refer to the industrial processes and solvent and other product use sectors.

**Table 2(c)**  
**Description of quantified economy-wide emission reduction target: global warming potential values (GWP)<sup>a</sup>**

<i>Gases</i>	<i>GWP values<sup>b</sup></i>
CO <sub>2</sub>	2nd AR
CH <sub>4</sub>	2nd AR
N <sub>2</sub> O	2nd AR
HFCs	2nd AR
PFCs	2nd AR
SF <sub>6</sub>	2nd AR
NF <sub>3</sub>	2nd AR
Other Gases (specify)	

*Abbreviations* : GWP = global warming potential

<sup>a</sup> Reporting by a developed country Party on the information specified in the common tabular format does not prejudice 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.

<sup>b</sup> 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.

Table 2(d)

**Description of quantified economy-wide emission reduction target: approach to counting emissions and removals from the LULUCF sector<sup>a</sup>**

<b>Role of LULUCF</b>	<b>LULUCF in base year level and target</b>	<b>Excluded</b>
	Contribution of LULUCF is calculated using	

*Abbreviation* : LULUCF = land use, land-use change and forestry.

<sup>a</sup> Reporting by a developed country Party on the information specified in the common tabular format does not prejudice 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.

## IV. Progress in achievement of Quantified Economy-wide Emissions Reduction Target

*Refer to Chapter 3 of the National Communication, 2014, for more detailed information.*

Policy-making in respect of greenhouse gas emission mitigation in Malta is a combination of sectoral action coupled with a more holistic top-down approach starting from a set overarching goal which is then translated into sectoral measures. Policies and measures that directly or indirectly contribute to the mitigation of national greenhouse gas emissions practically cover all sectors, albeit the effectiveness, in terms of actual emission savings (or enhancement of removal potential in the case of the sector LULUCF) varies. The sector Energy shows the highest potential for reducing emissions.

**Table IV-1 Summary of greenhouse gas emission mitigation policy approach.**

<b>Sector</b>	<b>Mitigation action focus</b>
<b>Energy</b>	Conventional energy generation; Energy end-use efficiency; Energy-related cross sectoral; Transport (particularly road transport).
<b>Industrial processes and other product use</b>	Fluorinated greenhouse gases.
<b>Agriculture</b>	Rural development; Nitrates action programme.
<b>Land use, land-use change and forestry</b>	Afforestation.
<b>Waste</b>	Solid waste management; Waste water treatment.

The policies and measures presented in this section include those that are implemented, adopted or planned, reflecting the state of play of mitigation policy as at the end of 2012. This timeframe also applies to the discussion of projections of emissions that will be presented in the subsequent section.

### **CTF tables reproduced in this section:**

Table 3 Progress in achievement of the quantified economy-wide emissions reduction target: information on mitigation actions and their effects.

Table 3  
Progress in achievement of the quantified economy-wide emission reduction target: information on mitigation actions and their effects

Name of mitigation action <sup>a</sup>	Sector(s) affected <sup>b</sup>	GHG(s) affected	Objective and/or activity affected <sup>c</sup>	Type of instrument <sup>d</sup>	Status of implementation <sup>e</sup>	Brief description <sup>f</sup>	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO <sub>2</sub> eq)			
									2013	2020	2025	2030
Plant loading and fuel switching	Energy	CH <sub>4</sub> , CO <sub>2</sub> , N <sub>2</sub> O	To comply with the derogation under the Large Combustion Plants Directive (LCPD)	Economic	Implemented	With a nominal installed capacity of 267 MW, the plant at MPS provides almost half of the national installed electricity generating capacity. For this installation, Enemalta has availed itself of the derogation available under the LCPD, wherein the plant will continue to be operated for a limited time only. In fact, under this derogation, the plant at MPS will be operated for not more than 20,000 hours starting from 1 January 2008 and ending no later than 31 December 2013. Since 2008, plant dispatch and load management has changed, with a larger proportion of the load shifting from MPS to DPS. The effect has been a reduction in the overall GHGs emitted per MWh generated, in view of the higher efficiency of this plant and the lower emissions per TJ of gas oil compared to heavy fuel oil.	2008	Enemalta	1,032.56	1,152.01	1,190.67	1,186.78
Installation of new and efficient generating capacity	Energy	CH <sub>4</sub> , CO <sub>2</sub> , N <sub>2</sub> O	Installation of new and efficient generating capacity (144MW) at Delimara Power Station (DPS) to partly replace existing inefficient plant at Marsa Power Station (MPS)	Economic	Implemented	Due to the increasing electrical demand and in order to reduce the output from the less efficient plant at Marsa Power Station (in view of limited operating lifetime as from 2008 pursuant to the obligations under the LCPD), Enemalta Corporation requires additional installed generation capacity preferably located within the Delimara Power Station site, to be connected to the electricity distribution network.	2012	Enemalta	IE	IE	IE	IE
Submarine electrical connection to European network	Energy	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O	Electrical connection to European network (2000MW HVAC) to further replace generating capacity at MPS	Economic	Implemented	The implementation of an electrical interconnection to the European energy grid in conjunction with the retention of significant local electricity generation capacity would offer greater flexibility in meeting local demand while providing a potential for considerable reduction in the national CO <sub>2</sub> emissions through the reduction of local emissions from the main contributor of CO <sub>2</sub> emissions.	2013		IE	IE	IE	IE
On-shore wind farms	Energy	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O	Generate renewable energy supply	Economic	Planned	A large scale wind farm at Wied Rami, limits of Rabat is planned to have a maximum generating capacity of 10.2 MW. It is estimated that the project will cover an area of circa 0.65 km <sup>2</sup> , with the altitude being around 200 metres above sea level. Another wind farm is planned in the limits of Zurrieq. This is to have a maximum capacity of 4.25 MW. The project covers an area of circa 1.7 km <sup>2</sup> , with the altitude above sea level varying between 45 and 75 m. The Government is in contact with foreign entities currently developing novel deep offshore wind technologies.	2013	National government (responsible ministries / departments)	8.41	17.40	7.92	18.12
Off-shore wind farms	Energy	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O	Generate renewable energy supply	Economic	Planned	An 50metre Wind Monitoring Mast was installed in October 2009 at Alexra Point, limits of Mellieha, as part of a project to assess the viability of the wind resource at Sikka l-Bajda, where an offshore wind farm is projected.	2013		0.00	98.77	101.80	102.90
Rebate on energy efficient domestic appliances	Energy	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O	To incentive energy efficient domestic appliances	Economic	Implemented	Government subsidy scheme on energy efficient appliances to provide financial incentives	2006		1.16	1.09	1.13	1.14
Distribution of energy saving lamps in the domestic sector	Energy	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O	To foster environmental friendliness	Economic	Implemented	Distribution of energy saving lamps	2009		19.82	18.62	19.19	19.40

Table 3  
Progress in achievement of the quantified economy-wide emission reduction target: information on mitigation actions and their effects

MLT\_BR1\_v0.1

Name of mitigation action <sup>a</sup>	Sector(s) affected <sup>b</sup>	GHG(s) affected	Objective and/or activity affected	Type of instrument <sup>c</sup>	Status of implementation <sup>d</sup>	Brief description <sup>e</sup>	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO <sub>2</sub> eq)				
									2013	2020	2023	2030	2030
Promotion of solar water heaters	Energy	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O	Increase domestic uptake of solar water heaters	Economic	Implemented	Subsidy on purchase price	2006	National government (responsible ministries / departments)	6.13	8.32	8.58	8.68	
Incentives for the uptake of PV systems	Energy	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O	Encourage electricity generation from renewable sources	Economic	Implemented	Government grant schemes	2006	National government (responsible ministries / departments)	21.39	21.49	22.15	22.39	
Grant on Purchase of micro wind turbines	Energy	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O	Promotion of micro wind turbines	Economic	Implemented	A scheme for the promotion of micro wind turbines installed on domestic premises was launched in 2006 and is still ongoing.	2006	National government (responsible ministries / departments)	0.05	0.07	0.07	0.07	
Energy savings and RES measures in state schools	Energy	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O	Energy conservation and inclusion of renewable energy sources in the design and construction of new schools	Economic	Implemented	Sun pipes, double glazing, efficient lighting systems, solar water heaters, photovoltaic systems, water conservation systems	2005	National government (responsible ministries / departments)	IE	IE	IE	IE	
Energy saving measures in social housing	Energy	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O	Energy conservation and inclusion of renewable energy sources in the design and construction of social housing	Economic	Implemented	double glazing, wall insulation, solar water heaters, photovoltaic panels, water runoff collection and use	2004	National government (responsible ministries / departments)	IE	IE	IE	IE	
Actions in the public sector	Energy	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O	To meet Government's responsibilities with respect to the environment	Information	Implemented	Create environmental awareness within ministries, promote environmentally friendly practices including energy efficiency and renewable energy	2004	National government (responsible ministries / departments)	1.15	2.82	2.89	2.92	
Energy saving measures in government owned industry (WSC)	Energy	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O	Reducing energy consumption in government owned industry	Economic	Implemented	Optimisation of reverse osmosis process, energy reduction in water transfer and distribution network, energy efficiency at Malta shipyards	1995	National government (responsible ministries / departments)	20.41	19.17	19.76	19.97	
Support schemes for industry, SMEs and the commercial sector	Energy	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O	Grant scheme to promote investment in energy efficient equipment	Economic	Implemented	ERDF Grant scheme	2009	National government (responsible ministries / departments)	11.66	12.55	12.94	13.08	
Intelligent metering	Energy	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O	Automated meter reading systems to provide required information for the management of low voltage networks	Regulatory	Implemented	Deployment of automated meter reading systems will increase tariff effectiveness, responsiveness and energy market trends. The eventual implementation of pre-payment and time-of-use tariffs are believed to contribute to reduction in energy demand.	2009	Enemalta	0.00	11.41	11.76	11.89	



Table 3  
**Progress in achievement of the quantified economy-wide emission reduction target: information on mitigation actions and their effects**

Name of mitigation action <sup>a</sup>	Sector(s) affected <sup>b</sup>	GHG(s) affected	Objective and/or activity affected	Type of instrument <sup>c</sup>	Status of implementation <sup>d</sup>	Brief description <sup>e</sup>	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO <sub>2</sub> eq)			
									2015	2020	2025	2030
The introduction of Autogas	Transport	CH <sub>4</sub> , CO <sub>2</sub> , N <sub>2</sub> O	LPG to used as a fuel for road vehicles	Fiscal	Implemented	The publishing of Legal Notice 393 of 2010, Autogas (Installation and Certification) Regulations under the Malta Resources Authority Act in a bid towards the introduction of autogas for vehicles on the Maltese market and to lay market regulation for retrofitting of engines. Accompanying the Legal Notice the MRA issued Codes Of Practice to guide installers on the installation of kits and engines on the design of Autogas service stations. The first service station opened in the 2nd quarter of 2012 and by the end of the year four technicians were approved to serve as competent installers. Government is planning a to subsidize the retrofitting of vehicles.	2011	National government (responsible ministries / department)	0.42	0.95	0.95	0.95
The introduction of a biofuel 'Substitution Obligation'	Transport, Waste management/waste	CH <sub>4</sub> , CO <sub>2</sub> , N <sub>2</sub> O	The obligatory blending of biofuels by importers of transport fuels	Regulatory	Implemented	The use of biofuels up to some years ago had not resulted in a significant decrease in national GHG emissions as its use decreased from 1.73% , by energy, of diesel used in road transport in 2007 to 0.68% in 2009. This triggered the MRA to introduce a substitution obligation on all importers and/or wholesalers of petroleum fuel used for transport. The annual mandatory substitution obligation in 2011 was 1.5% of the total energy content petroleum place on the market. The obligations rises in intervals of 1% to reach 9.5% by 2019 and then 10% by 2020.	2011	National government (responsible ministries / department)	28.71	54.28	56.44	58.38
The introduction of bioethanol in E85 blends	Transport	CH <sub>4</sub> , CO <sub>2</sub> , N <sub>2</sub> O	The proposed introduction of 85% bioethanol blends with petrol	Regulatory	Implemented	In order to reach the substitution obligation bio-ETBE shall have to be blended however in parallel there will be the introduction of E85 i.e a blend of 85% bioethanol to 15% conventional petrol.	NA	National government (responsible ministries / department)	NE	NE	NE	NE
Uptake of Electrical Cars	Energy, Transport	CH <sub>4</sub> , CO <sub>2</sub> , N <sub>2</sub> O	The increase in the use of Electric vehicles	Regulatory	Implemented	The use of electric vehicles is being promoted as an alternative means of transportation. The use and purchase of such vehicles is being encouraged through (i) a decrease in their registration tax and (ii) new owners of M1 electric vehicles may apply for a grant of 25% or €4000 of the purchase price.	2011	National government (responsible ministries / department)	-0.36	-1.56	-1.66	-1.70
Promotion of E-working and Tele-working	Transport	CH <sub>4</sub> , CO <sub>2</sub> , N <sub>2</sub> O	Reducing transport emissions via e-working and tele-working	Voluntary Agreement	Implemented	In 2008 a teleworking policy was published by government which took into consideration feedback received from a research project carried out together with the National Commission for the Promotion of Equality (NCPE). The purpose of this policy was to set up a formal framework for the administration of telework in the public administration of Malta and the policy document outlines the general principles on which telework should be administered in the Public Administration of Malta.	2010	National government (responsible ministries / department)	0.55	0.66	0.66	0.66

Table 3  
Progress in achievement of the quantified economy-wide emission reduction target: information on mitigation actions and their effects

Name of mitigation action <sup>a</sup>	Sector(s) affected <sup>b</sup>	GHG(s) affected	Objective and/or activity affected	Type of instrument <sup>c</sup>	Status of implementation <sup>d</sup>	Brief description <sup>e</sup>	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO <sub>2</sub> eq)			
									2015	2020	2025	2030
Promotion of Transport Modal Shift towards Public Transportation	Transport	CH <sub>4</sub> , CO <sub>2</sub> , N <sub>2</sub> O	Increase public transport use	Regulatory	Implemented	The Modal shift in the transport sector is mainly driven by the public transport reform. A modal shift of 8% from the use of private cars to use of public transport is being targeted. Government is implementing measures to reform the public transport system as part of the new transport policy and contract has been awarded to a major international transport company to manage and upgrade the national bus system.	2012	National government (responsible ministries / departments)	16.86	39.89	41.65	43.21
Improving Energy Efficiency in the Transport sector to include Scrappage Scheme and Licence categorization	Transport	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O	Set up formal framework for administration of network in the public administration	Fiscal	Implemented	Several actions were implemented or are being prepared e.g. vehicle scrappage scheme and registration licence reform	2008	National government (responsible ministries / departments)	0.10	0.11	0.11	0.11
Modernisation of Agricultural holdings	Agriculture	CH <sub>4</sub> , CO <sub>2</sub> , N <sub>2</sub> O	To contribute to the promotion of sustainable rural development	Economic	Implemented	"The Ministry for Resources and Rural Affairs Paying Agency launched a project call for the agricultural sector under the European Agricultural funds for Rural Development (EARDP) – Measure 121 – Modernisation of Agricultural Holdings. Farms and enterprises engaged in agricultural production were eligible to apply for the funds allocated and the project grant was 50% of eligible costs. One of the sub-measures (sub-measure 2) eligible for funding within this call was environmental investments."	2010	National government (responsible ministries / departments)	IE	IE	IE	IE
Nitrates Action Programme	Agriculture	CH <sub>4</sub> , CO <sub>2</sub> , N <sub>2</sub> O	To target the contamination of both surface and ground water from nitrates derived from both organic and inorganic fertilisers	Regulatory	Implemented	The Nitrates Action Programme has the general purpose of "reducing water pollution caused or induced by nitrates from agricultural sources and preventing further such pollution". A threshold nitrate concentration of 50 mg/l is set as the maximum permissible level, and the Programme limits the application of livestock manure to land in excess of 170 kg N/ha/yr.	2010	National government (responsible ministries / departments)	21.61	32.63	32.66	30.76
Aerial Emissions Works at Maghrib and Qortin * Capping and Extraction of Gases from managed Landfills.	Waste management/waste & Energy	CH <sub>4</sub>	Extraction of gases from all non-hazardous waste landfills.	Other (other)	Implemented	Gas extraction from closed waste dumps to treat odour and noxious gas emissions. The works also involved the recontouring works of the landfill to improve stability, control of emissions and aesthetics. Capping and extraction of gases from the engineered non-hazardous waste landfill. Extracted gases to be utilised for power	2008	Wasteserv Ltd	30.80	33.99	37.04	39.65
Sant'Anna Mechanical Biological treatment Plant	Energy, Waste management/waste &	CH <sub>4</sub> , CO <sub>2</sub> , N <sub>2</sub> O	Biological treatment of organic waste	Other (planning)	Implemented	Treatment of organic waste to obtain energy and divert waste from Landfill	2011	Wasteserv Ltd	3.37	3.18	3.27	3.30
UW/WTP south operation	Energy, Waste management/waste &	CH <sub>4</sub> , CO <sub>2</sub> , N <sub>2</sub> O	Treatment of wastewater	Other (planning)	Implemented	Treatment of wastewater to obtain energy and reduce untreated wastewater being pumped to sea	2011	National government (responsible ministries / departments)	3.82	3.60	3.70	3.74
Wastewater sludge treatment	Energy, Waste management/waste &	CH <sub>4</sub>	treatment of wastewater sludge	Other (other)	Adopted	Treatment of wastewater sludge leading to a reduction of untreated sludge being placed in the landfill	2012	National government (responsible ministries / departments)	0.00	0.00	0.00	0.00



**Table 3**  
**Progress in achievement of the quantified economy-wide emission reduction target: information on mitigation actions and their effects**

Name of mitigation action <sup>a</sup>	Sector(s) affected <sup>b</sup>	GHG(s) affected	Objective and/or activity affected	Type of instrument <sup>c</sup>	Status of implementation <sup>d</sup>	Brief description <sup>e</sup>	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (net cumulative, in kt CO <sub>2</sub> eq)			
									2013	2020	2023	2030
Establishment of new Mechanical Biological treatment Plant in the North of Malta	Energy, Waste management/waste	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O	Biological treatment of organic waste (including Manure)	Other (other)	Planned	Treatment of organic waste to obtain energy and divert waste from Landfill, treatment of manure for farms to obtain energy	2015	National government (responsible ministries / department)	14.02	13.57	13.57	13.73
Establishment of Biological treatment Plant in Gozo	Energy, Waste management/waste	CH <sub>4</sub> , CO <sub>2</sub> , N <sub>2</sub> O	Biological treatment of organic waste (including Manure)	Other (planning)	Planned	Treatment of organic waste to obtain energy and divert waste from Landfill, treatment of manure for farms to obtain energy	2018	National government (responsible ministries / department)	0.00	2.05	2.11	2.13
Establishment of a Waste to Energy Facility for the treatment of refuse derived fuel and other waste streams which cannot undergo other treatment	Energy, Waste management/waste	CH <sub>4</sub> , CO <sub>2</sub> , N <sub>2</sub> O	Treatment of refuse derived fuel and other waste streams which cannot undergo other treatment	Other (planning)	Adopted	Thermal treatment of waste	2011	National government (responsible ministries / department)	0.00	-69.99	-68.92	-68.47
Large installations in PV parks	Energy	CH <sub>4</sub> , CO <sub>2</sub> , N <sub>2</sub> O	To generate electricity from renewable energy through the installation of PV parks	Other (planning)	Planned	Education on the potential use of renewable energy sources	2021	National government (responsible ministries / department)	0.00	0.00	0.37	0.38
Siggiewi Cattle farm	Energy, Agriculture	CH <sub>4</sub> , CO <sub>2</sub> , N <sub>2</sub> O	the treatment of animal manure in Siggiewi	Other (planning)	Planned	Treatment of animal manure and production of energy	2015	Private company	0.00	1.14	1.17	1.18
Supply of natural gas to fuel existing and future generating plant at DPS in 2018	Energy	CH <sub>4</sub> , CO <sub>2</sub> , N <sub>2</sub> O	Conversion of fossil fuel fired plants to natural gas and reduction of CO <sub>2</sub> emissions	Economic	Planned	Once gas is available all existing generating plants at DPS will be converted to natural gas if found feasible.	2018	National government (responsible ministries / department)	0.00	1,527.19	1,592.63	1,597.44
Future installation of a further new and efficient generating capacity of 140MW in 2020	Energy	CH <sub>4</sub> , CO <sub>2</sub> , N <sub>2</sub> O	Ensure sufficient reserve capacity, meet demand growth and further replace the less efficient steam plant at DPS.	Economic	Planned	A further new and efficient plant (140MW) is planned in 2020 to ensure reserve capacity, meet demand and replace less efficient steam plant. It is assumed that if gas is available by 2020 this plant will be capable of operating with natural gas.	2020	Enemalta	IE	IE	IE	IE
Future installation of new generating capacity in 2025	Energy	CH <sub>4</sub> , CO <sub>2</sub> , N <sub>2</sub> O	To replace existing combined cycle gas turbines plant since it would have reached its end of life.	Economic	Planned	New efficient generating capacity will be required in 2025 to replace the combined cycle plant. It is assumed that if gas is available by 2020 (PAM36) this plant will be capable of operating with natural gas and would need to have a capacity of not less than 120MW.	2025	Enemalta	IE	IE	IE	IE
Requirements on the energy performance of building regulations	Energy	CH <sub>4</sub> , CO <sub>2</sub> , N <sub>2</sub> O	Minimum Equipment Energy Performance Standards	Regulatory	Adopted	New building regulations to minimise energy consumption in newly built buildings and others that undergo major renovations.	2008	National government (responsible ministries / department)	NE	NE	NE	NE
Energy Management Plans for Major Projects	Energy	CH <sub>4</sub> , CO <sub>2</sub> , N <sub>2</sub> O	Energy use in buildings	Regulatory	Adopted	Large scale residential and commercial projects are required to submit energy and water management plans as part of the application procedure for a development planning permit.	2006	National government (responsible ministries / department)	NE	NE	NE	NE
Energy Audits for households	Energy	CH <sub>4</sub> , CO <sub>2</sub> , N <sub>2</sub> O	Energy use in buildings	Regulatory	Adopted	The local electricity supplier, Enemalta, will be providing energy audits for households (and SMEs) in conjunction with the Ministry for Resources and Infrastructure.	2012	National government (responsible ministries / department)	NE	NE	NE	NE

Table 3  
Progress in achievement of the quantified economy-wide emission reduction target: information on mitigation actions and their effects

Name of mitigation action <sup>a</sup>	Sector(s) affected <sup>b</sup>	GHG(s) affected	Objective and/or activity affected	Type of instrument <sup>c</sup>	Status of implementation <sup>d</sup>	Brief description <sup>e</sup>	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO <sub>2</sub> eq)			
									2013	2020	2025	2030
Energy Efficiency measures in the hospitality sector	Energy	CH <sub>4</sub> , CO <sub>2</sub> , N <sub>2</sub> O	Energy use by hotels and restaurants	Economic	Adopted	Enterprises in the hospitality sector such as licensed hotels, guesthouses, hotels, snack bars and restaurants may all benefit from a loan financed by Malta Enterprise.	2011	National government (responsible ministries / department)	NE	NE	NE	NE
Promotion of ground water heating/cooling	Energy	CH <sub>4</sub> , CO <sub>2</sub> , N <sub>2</sub> O	Heating & Cooling in Buildings	Research	Adopted	There is growing interest in Malta on the use of groundwater for heating and cooling buildings, by means of heat exchange through a borehole system. The Malta Resources Authority issued a consultation paper in 2009 outlining the required information and the studies necessary for the application of such an installation to be considered by the Authority.	2011	National government (responsible ministries / department)	NE	NE	NE	NE
Promotion of CHP for industry and large tourist complexes	Energy	CH <sub>4</sub> , CO <sub>2</sub> , N <sub>2</sub> O	Heat use in industry	Research	Adopted	Promotion of CHP for large users who use heat in their processes	2009	National government (responsible ministries / department)	NE	NE	NE	NE
Creation of an energy efficiency fund	Energy	CH <sub>4</sub> , CO <sub>2</sub> , N <sub>2</sub> O	Establishment on a sound basis energy efficiency support schemes	Economic	Adopted	Government will ensure energy efficiency funding that will provide support for energy efficiency activities. Apart from national funding, €13million from structural funds will be allocated to energy efficiency and €10 million for renewable sources of energy.	2009	National government (responsible ministries / department)	NE	NE	NE	NE
Information Campaign	Energy	CH <sub>4</sub> , CO <sub>2</sub> , N <sub>2</sub> O	Energy efficiency	Information	Adopted	The campaign aims to target energy saving practices than previous campaigns. It aims to inform people about the options available and thus empower them to be able to take actions to reduce their energy consumption by purchasing or installing energy efficient products in their homes or offices and by choosing more sustainable modes of transport.	2008	National government (responsible ministries / department)	NE	NE	NE	NE
Revision of administrative arrangements	Energy	CH <sub>4</sub> , CO <sub>2</sub> , N <sub>2</sub> O	Energy efficiency and renewables	Information	Adopted	Clarification of roles of entities involved in energy efficiency Ensuring the continuous development, refinement and implementation of energy efficiency measures and the collection of data and knowledge to support these actions.	2009	National government (responsible ministries / department)	NE	NE	NE	NE
participation and research regarding energy saving measures	Energy	CH <sub>4</sub> , CO <sub>2</sub> , N <sub>2</sub> O	Participate in and promote research relevant to the islands – such as new solar technology, marine RES.	Information	Adopted	Certain energy saving measures that are currently not yet cost effective or commercially available may have a higher potential in Malta than in other member states. Such a typical area of interest is solar cooling, given the high demand for air conditioning in residences and offices in summer in Malta. This measure will seek to keep abreast, and promote participation in, research in energy efficiency.	2007	National government (responsible ministries / department)	NE	NE	NE	NE

**Table 3**  
**Progress in achievement of the quantified economy-wide emission reduction target: information on mitigation actions and their effects**

Name of mitigation action <sup>a</sup>	Sector(s) affected <sup>b</sup>	GHG(s) affected	Objective and/or activity affected	Type of instrument <sup>c</sup>	Status of implementation <sup>d</sup>	Brief description <sup>e</sup>	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO <sub>2</sub> eq)			
									2015	2020	2025	2030
Subsidy schemes for building envelope improvement	Energy	CH <sub>4</sub> , CO <sub>2</sub> , N <sub>2</sub> O	In order to reduce the energy consumed in households and to educate citizens on energy saving measures in building, government launched a scheme in 2006 to subsidise roof insulation on domestic buildings.	Economic	Implemented	The roof insulation eligible under this scheme had to meet the requirements of the technical guidance conservation of fuel, energy & natural resources (minimum requirements on energy performance of building regulations, 2006).	2006	National government (responsible ministries / department)	0.46	0.46	0.47	0.47
Fisheries Fund	Energy	CH <sub>4</sub> , CO <sub>2</sub> , N <sub>2</sub> O	The Malta Fisheries operational programme 2007 -13 included a component relating to modernisation of fishing vessels with the objective of lowering emissions and improving engine efficiency.	Voluntary Agreement	Adopted	The target was 7 vessels (876kW) improved by 2013	2016	National government (responsible ministries / department)	NE	NE	NE	NE
Diversion of Waste from Landfills	Waste management/waste	CH <sub>4</sub>	Divert waste from landfills to other treatment options	Other (other)	Adopted	Summary measure including all emission reductions resulting in the waste sector from diversion of waste from landfills to other treatment facilities included in PAM 28, 33, 34	2012	National government (responsible ministries / department)	7.58	17.53	24.91	30.38
Implementation of F-gases Regulation	Industry/industrial processes	HFCs, PFCs, SF <sub>6</sub>	Control and limit F-gas emissions from sectors such as Refrigeration and Air-conditioning	Regulatory	Implemented	Control through training and certification of technical personnel and reporting of usage, refilling and destruction.	2012	National government (responsible ministries / department)	76.52	127.93	180.48	233.68
Afforestation projects in various locations in Gozo. 34U (Tree for you campaign)	Forestry/LULUCF	CO <sub>2</sub>	Planting of indigenous tree, forestation, increase the surface area with permanent	Voluntary Agreement	Implemented	Trees and shrubs/climbers and perennial have been planted from 2010 to date through a number of different initiatives. Other planned afforestation projects will take place in 2013.	2004	National government (responsible ministries / department)	5.42	7.46	8.31	8.31
					Implemented							
					Implemented							
					Implemented							
					Implemented							
					Implemented							

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.  
<sup>a</sup> Parties should use an asterisk (\*) to indicate that a mitigation action is included in the 'with measures' projection.  
<sup>b</sup> 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.  
<sup>c</sup> To the extent possible, the following types of instrument should be used: economic, fiscal, voluntary agreement, regulatory, information, education, research, other.  
<sup>d</sup> To the extent possible, the following descriptive terms should be used to report on the status of implementation: implemented, adopted, planned.  
<sup>e</sup> Additional information may be provided on the cost of the mitigation actions and the relevant timescale.  
<sup>f</sup> Optional year or years deemed relevant by the Party.

## V. GHG Emission Projections

**Refer to Chapter 4 of the National Communication, 2014, for more detailed information.**

The projections of greenhouse gas emissions and removals presented in this section reflect the state of play of mitigation policy as at the end of 2012.

Figure V-1 shows the projected aggregate effect of policies and measures discussed in the previous section when comparing the no policy ('without measures') scenario, the 'with existing measures' (or 'with measures') scenario and the 'with additional measures' scenario. The main contributing factor in the reduction of overall greenhouse gas emissions is the policies and measures that impact on emissions from the electricity generation sector (Figure V-2), either through direct influence on emissions from local electricity generation plants (e.g. fuel switching or new, more efficiency, generating plant) or measures that reduce the demand for locally generated electricity, thus leading to a reduction in emissions.

If one had to assess to what extent Malta will comply with its obligations under the Effort-Sharing Decision (ESD), the suite of policies and measures presented in this report should permit Malta to maintain greenhouse gas emissions falling within the scope of the ESD to a level below the quantified targets for the years 2013-2020, as established pursuant to that decision (Figure V-3).

### CTF tables reproduced in this section:

- Table 5 Summary of key variables and assumptions used in the projections analysis;
- Table 6(a) Information on updated greenhouse gas projections under a 'with measures' scenario;
- Table 6(b) Information on updated greenhouse gas projections under a 'without measures' scenario;
- Table 6(c) Information on updated greenhouse gas projections under a 'with additional measures' scenario.

Table 5

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Summary of key variables and assumptions used in the projections analysis<sup>a</sup>

Key underlying assumptions		Historical <sup>b</sup>						Projected			
Assumption	Unit	1990	1995	2000	2005	2010	2011	2015	2020	2025	2030
GDP growth rate	%			6.30	3.70	2.50	2.10	1.90	1.90	2.00	1.90
Population	thousands			380.20	402.67	414.37	417.62	425.24	428.88	431.13	429.88
Population growth	%			0.44	0.70	0.18	0.78	0.37	0.16	0.04	-0.12
Parties should include key underlying assumptions as appropriate International oil				37.50	61.90	78.00	81.00	94.50	108.10	117.60	123.20

<sup>a</sup> Parties should include historical data used to develop the greenhouse gas projections reported.

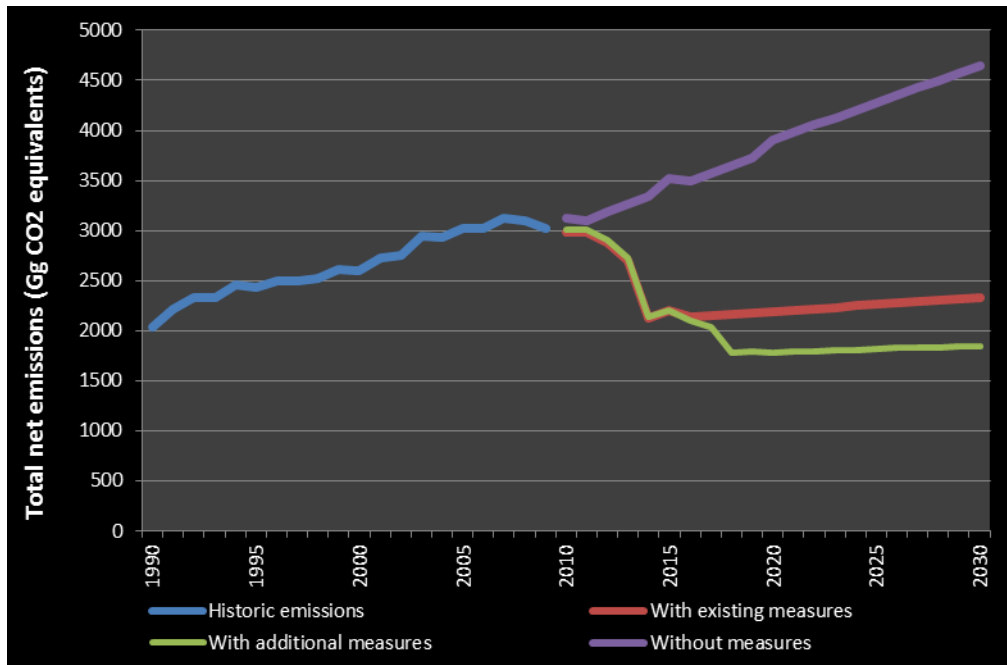


Figure V-1 Projection of the aggregated effect of policies and measures for different scenarios.

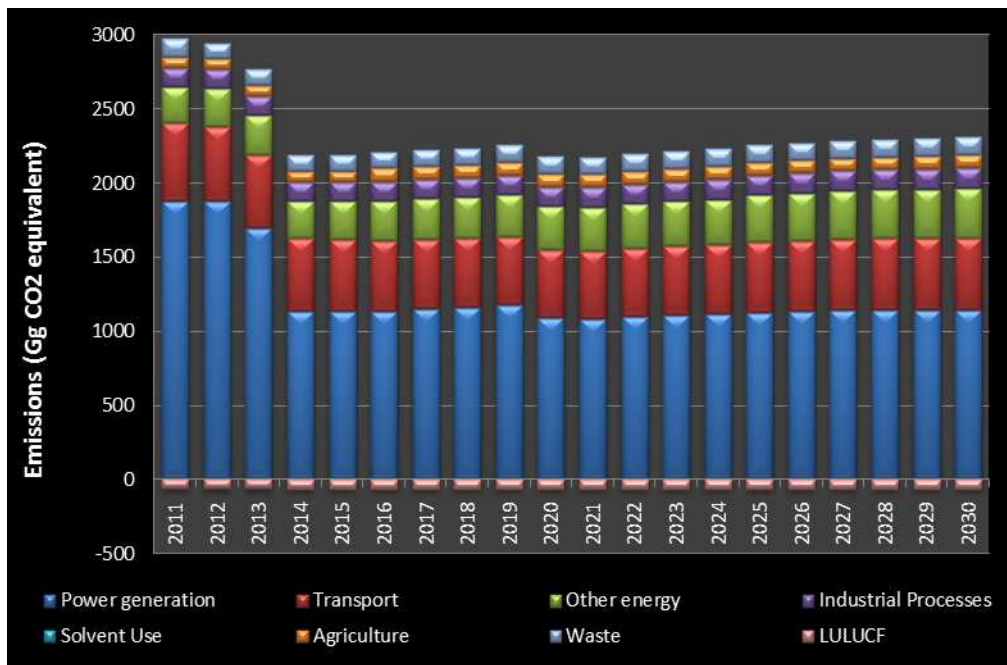


Figure V-2 Projection (with existing measures) of total emissions differentiated by sector.



Table 6(a)  
Information on updated greenhouse gas projections under a 'with measures' scenario<sup>a</sup>

	GHG emissions and removals <sup>b</sup>							GHG emission projections	
	Base year (1990)	(kt CO <sub>2</sub> eq)						(kt CO <sub>2</sub> eq)	
		1990	1995	2000	2005	2010	2011	2020	2030
<i>Sector<sup>c,d</sup></i>									
Energy						2,655.40	2,650.20	1,844.30	1,966.00
Transport						575.00	580.00	516.00	562.00
Industry/industrial processes						121.90	121.90	141.70	147.10
Agriculture						78.10	71.10	85.90	83.80
Forestry/LULUCF						-59.00	-60.00	-64.00	-64.00
Waste management/waste						126.20	126.20	114.50	128.10
Other (specify)									
<i>Gas</i>									
CO <sub>2</sub> emissions including net CO <sub>2</sub> from LULUCF						2,579.90	2,574.60	1,767.00	1,887.40
CO <sub>2</sub> emissions excluding net CO <sub>2</sub> from LULUCF						2,638.50	2,634.30	1,830.50	1,951.30
CH <sub>4</sub> emissions including CH <sub>4</sub> from LULUCF						175.33	169.45	167.55	179.39
CH <sub>4</sub> emissions excluding CH <sub>4</sub> from LULUCF						175.33	169.45	167.55	179.97
N <sub>2</sub> O emissions including N <sub>2</sub> O from LULUCF						47.33	45.34	48.13	48.12
N <sub>2</sub> O emissions excluding N <sub>2</sub> O from LULUCF						47.33	45.34	48.13	48.12
HFCs						118.70	118.70	134.80	140.20
PFCs						0.10	0.10	3.80	3.80
SF <sub>6</sub>						1.60	1.60	1.60	1.60
Other (specify)									
<b>Total with LULUCF<sup>e</sup></b>						2,922.96	2,909.79	2,122.88	2,260.51
<b>Total without LULUCF</b>						2,981.56	2,969.49	2,186.38	2,324.99

Abbreviations: GHG = greenhouse gas, LULUCF = land use, land-use change and forestry.

<sup>a</sup> In accordance with the "Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II. UNFCCC reporting guidelines on national communications", at a minimum Parties shall report a 'with measures' scenario, and may report 'without measures' and 'with additional measures' scenarios. If a Party chooses to report 'without measures' and/or 'with additional measures' scenarios they are to use tables 6(b) and/or 6(c), respectively. If a Party does not choose to report 'without measures' or 'with additional measures' scenarios then it should not include tables 6(b) or 6(c) in the biennial report.

<sup>b</sup> Emissions and removals reported in these columns should be as reported in the latest GHG inventory and consistent with the emissions and removals reported in the table on GHG emissions and trends provided in this biennial report. Where the sectoral breakdown differs from that reported in the GHG inventory Parties should explain in their biennial report how the inventory sectors relate to the sectors reported in this table.

<sup>c</sup> 20XX is the reporting due-date year (i.e. 2014 for the first biennial report).

<sup>d</sup> In accordance with paragraph 34 of the "Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II. UNFCCC reporting guidelines on national communications", projections shall be presented on a sectoral basis, to the extent possible, using the same sectoral categories used in the policies and measures section. This table should follow, to the extent possible, the same sectoral categories as those listed in paragraph 17 of those guidelines, namely, to the extent appropriate, the following sectors should be considered: energy, transport, industry, agriculture, forestry and waste management.

<sup>e</sup> To the extent possible, the following sectors should be used: energy, transport, industry/industrial processes, agriculture, forestry/LULUCF, waste management/waste, other sectors (i.e. cross-cutting), as appropriate.

<sup>f</sup> Parties may choose to report total emissions with or without LULUCF, as appropriate.

Table 6(b)  
Information on updated greenhouse gas projections under a 'without measures' scenario<sup>a</sup>

Sector <sup>d,e</sup>	GHG emissions and removals <sup>b</sup>							GHG emission projections	
	Base year (1990)	(kt CO <sub>2</sub> eq)						(kt CO <sub>2</sub> eq)	
		1990	1995	2000	2005	2010	2011	2020	2030
Energy						2,655.40	2,650.20	3,363.40	3,962.50
Transport						575.00	580.00	795.00	944.00
Industry/industrial processes						121.90	121.90	246.90	358.00
Agriculture						78.10	71.10	116.90	126.70
Forestry/LULUCF						-59.00	-60.00	-59.00	-59.00
Waste management/waste						126.20	126.20	174.90	196.20
Other (specify)									
<b>Gas</b>									
CO <sub>2</sub> emissions including net CO <sub>2</sub> from LULUCF						2,579.90	2,574.60	3,292.50	3,889.40
CO <sub>2</sub> emissions excluding net CO <sub>2</sub> from LULUCF						2,638.50	2,634.30	3,351.40	3,948.30
CH <sub>4</sub> emissions including CH <sub>4</sub> from LULUCF						175.33	169.45	244.86	272.35
CH <sub>4</sub> emissions excluding CH <sub>4</sub> from LULUCF						175.33	169.45	244.86	272.35
N <sub>2</sub> O emissions including N <sub>2</sub> O from LULUCF						47.33	45.34	60.59	66.31
N <sub>2</sub> O emissions excluding N <sub>2</sub> O from LULUCF						47.33	45.34	60.59	66.31
HFCs						118.70	118.70	239.90	351.10
PFCs						0.10	0.10	3.80	3.80
SF <sub>6</sub>						1.60	1.60	1.60	1.60
Other (specify)									
<b>Total with LULUCF<sup>f</sup></b>						2,922.96	2,909.79	3,843.25	4,584.56
<b>Total without LULUCF</b>						2,981.56	2,969.49	3,902.15	4,643.46

Abbreviations: GHG = greenhouse gas, LULUCF = land use, land-use change and forestry.

<sup>a</sup> In accordance with the "Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications", at a minimum Parties shall report a 'with measures' scenario, and may report 'without measures' and 'with additional measures' scenarios. If a Party chooses to report 'without measures' and/or 'with additional measures' scenarios they are to use tables 6(b) and/or 6(c), respectively. If a Party does not choose to report 'without measures' or 'with additional measures' scenarios then it should not include tables 6(b) or 6(c) in the biennial report.

<sup>b</sup> Emissions and removals reported in these columns should be as reported in the latest GHG inventory and consistent with the emissions and removals reported in the table on GHG emissions and trends provided in this biennial report. Where the sectoral breakdown differs from that reported in the GHG inventory Parties should explain in their biennial report how the inventory sectors relate to the sectors reported in this table.

<sup>c</sup> 20XX is the reporting due-date year (i.e. 2014 for the first biennial report).

<sup>d</sup> In accordance with paragraph 34 of the "Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications", projections shall be presented on a sectoral basis, to the extent possible, using the same sectoral categories used in the policies and measures section. This table should follow, to the extent possible, the same sectoral categories as those listed in paragraph 17 of those guidelines, namely, to the extent appropriate, the following sectors should be considered: energy, transport, industry, agriculture, forestry and waste management.

<sup>e</sup> To the extent possible, the following sectors should be used: energy, transport, industry/industrial processes, agriculture, forestry/LULUCF, waste management/waste, other sectors (i.e. cross-cutting), as appropriate.

<sup>f</sup> Parties may choose to report total emissions with or without LULUCF, as appropriate.

Table 6(c)

Information on updated greenhouse gas projections under a 'with additional measures' scenario<sup>d</sup>

	GHG emissions and removals <sup>b</sup>							GHG emission projections	
	Base year (1990)	(kt CO <sub>2</sub> eq)						(kt CO <sub>2</sub> eq)	
		1990	1995	2000	2005	2010	2011	2020	2030
<i>Sector<sup>d,e</sup></i>									
Energy						2,655.40	2,650.20	1,455.40	1,544.00
Transport						575.00	580.00	516.00	562.00
Industry/industrial processes						121.90	121.90	137.90	143.30
Agriculture						78.10	71.10	85.90	83.80
Forestry/LULUCF						-59.00	-60.00	-64.00	-64.00
Waste management/waste						126.20	126.20	101.00	77.90
Other (specify)									
<i>Gas</i>									
CO <sub>2</sub> emissions including net CO <sub>2</sub> from LULUCF						2,579.90	2,574.60	1,333.40	1,411.00
CO <sub>2</sub> emissions excluding net CO <sub>2</sub> from LULUCF						2,638.50	2,634.30	1,397.00	1,474.90
CH <sub>4</sub> emissions including CH <sub>4</sub> from LULUCF						175.33	169.45	153.12	128.78
CH <sub>4</sub> emissions excluding CH <sub>4</sub> from LULUCF						175.33	169.45	153.12	128.78
N <sub>2</sub> O emissions including N <sub>2</sub> O from LULUCF						47.33	45.34	45.49	45.36
N <sub>2</sub> O emissions excluding N <sub>2</sub> O from LULUCF						47.33	45.34	45.49	45.36
HFCs						118.70	118.70	134.80	140.20
PFCs						0.10	0.10	3.80	3.80
SF <sub>6</sub>						1.60	1.60	1.60	1.60
Other (specify)									
<b>Total with LULUCF<sup>f</sup></b>						2,922.96	2,909.79	1,672.21	1,730.74
<b>Total without LULUCF</b>						2,981.56	2,969.49	1,735.81	1,794.64

Abbreviations: GHG = greenhouse gas, LULUCF = land use, land-use change and forestry.

<sup>a</sup> In accordance with the "Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications", at a minimum Parties shall report a 'with measures' scenario, and may report 'without measures' and 'with additional measures' scenarios. If a Party chooses to report 'without measures' and/or 'with additional measures' scenarios they are to use tables 6(b) and/or 6(c), respectively. If a Party does not choose to report 'without measures' or 'with additional measures' scenarios then it should not include tables 6(b) or 6(c) in the biennial report.

<sup>b</sup> Emissions and removals reported in these columns should be as reported in the latest GHG inventory and consistent with the emissions and removals reported in the table on GHG emissions and trends provided in this biennial report. Where the sectoral breakdown differs from that reported in the GHG inventory Parties should explain in their biennial report how the inventory sectors relate to the sectors reported in this table.

<sup>c</sup> 20XX is the reporting due-date year (i.e. 2014 for the first biennial report).

<sup>d</sup> In accordance with paragraph 34 of the "Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications", projections shall be presented on a sectoral basis, to the extent possible, using the same sectoral categories used in the policies and measures section. This table should follow, to the extent possible, the same sectoral categories as those listed in paragraph 17 of those guidelines, namely, to the extent appropriate, the following sectors should be considered: energy, transport, industry, agriculture, forestry and waste management.

<sup>e</sup> To the extent possible, the following sectors should be used: energy, transport, industry/industrial processes, agriculture, forestry/LULUCF, waste management/waste, other sectors (i.e. cross-cutting), as appropriate.

<sup>f</sup> Parties may choose to report total emissions with or without LULUCF, as appropriate.



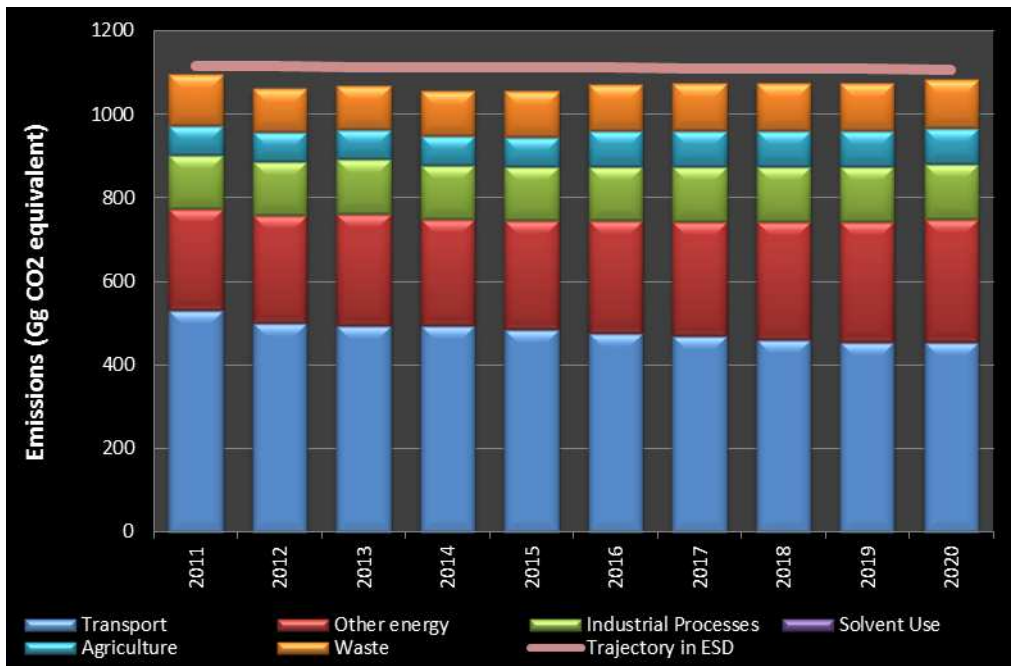


Figure V-3 Projection of emissions covered by the Effort-Sharing Decision (ESD) in relation to the linear trajectory indicated for Malta by the same decision.

## **VI. Provision of Financial, Technological and Capacity-building Support to Developing Country Parties.**

***Refer to Chapter 6 of the National Communication, 2014, for more detailed information.***

Between 2011 and 2012 Malta contributed public funds amounting to €600,000 (\$810,810) in total under the Fast Start Finance programme. These funds were targeted at financing projects in eight developing countries, thus also contributing to the transfer of a wide array of technologies and practices that should assist in enhancing the resilience of the targeted vulnerable communities.

### **CTF tables reproduced in this section:**

Table 7	Provision of public financial support: summary information in 2011; Provision of public financial support: summary information in 2012;
Table 7(b)	Provision of public financial support: contribution through bilateral, regional and other channels in 2011; Provision of public financial support: contribution through bilateral, regional and other channels in 2012.

Table 7  
Provision of public financial support: summary information in 2011<sup>a</sup>

Allocation channels	Year									
	European euro - EUR					USD <sup>b</sup>				
	Core/ general <sup>c</sup>	Climate-specific <sup>d</sup>				Core/ general <sup>c</sup>	Climate-specific <sup>d</sup>			
	Mitigation	Adaptation	Cross-cutting <sup>e</sup>	Other <sup>f</sup>		Mitigation	Adaptation	Cross-cutting <sup>e</sup>	Other <sup>f</sup>	
<b>Total contributions through multilateral channels:</b>	NA				NA	NA				NA
Multilateral climate change funds <sup>g</sup>	NA				NA	NA				NA
Other multilateral climate change funds <sup>h</sup>										
Multilateral financial institutions, including regional development banks	NA				NA	NA				NA
Specialized United Nations bodies										
<b>Total contributions through bilateral, regional and other channels</b>		59,818.00	50,550.00	189,632.00			80,855.99	68,328.44	256,325.57	
<b>Total</b>	NA	59,818.00	50,550.00	189,632.00	NA	NA	80,855.99	68,328.44	256,325.57	NA

Abbreviation: USD = United States dollars.

<sup>a</sup> Parties should fill in a separate table for each year, namely 2011 and 2012, where 2014 is the reporting year.

<sup>b</sup> 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.

<sup>c</sup> This refers to support to multilateral institutions that Parties cannot specify as climate-specific.

<sup>d</sup> Parties should explain in their biennial reports how they define funds as being climate-specific.

<sup>e</sup> This refers to funding for activities which are cross-cutting across mitigation and adaptation.

<sup>f</sup> Please specify.

<sup>g</sup> Multilateral climate change funds listed in paragraph 17(a) of the "UNFCCC biennial reporting guidelines for developed country Parties" in decision 2/CP.17.

<sup>h</sup> 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.

Table 7  
Provision of public financial support: summary information in 2012<sup>a</sup>

Allocation channels	Year									
	European euro - EUR					USD <sup>b</sup>				
	Core/ general <sup>c</sup>	Climate-specific <sup>d</sup>				Core/ general <sup>c</sup>	Climate-specific <sup>d</sup>			
	Mitigation	Adaptation	Cross-cutting <sup>e</sup>	Other <sup>f</sup>		Mitigation	Adaptation	Cross-cutting <sup>e</sup>	Other <sup>f</sup>	
<b>Total contributions through multilateral channels:</b>	NA				NA	NA				NA
Multilateral climate change funds <sup>g</sup>	NA				NA	NA				NA
Other multilateral climate change funds <sup>h</sup>										
Multilateral financial institutions, including regional development banks	NA				NA	NA				NA
Specialized United Nations bodies										
<b>Total contributions through bilateral, regional and other channels</b>		33,205.00	96,025.00	170,768.00			44,893.00	129,825.00	230,891.15	
<b>Total</b>	NA	33,205.00	96,025.00	170,768.00	NA	NA	44,893.00	129,825.00	230,891.15	NA

Abbreviation: USD = United States dollars.

<sup>a</sup> Parties should fill in a separate table for each year, namely 2011 and 2012, where 2014 is the reporting year.

<sup>b</sup> 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.

<sup>c</sup> This refers to support to multilateral institutions that Parties cannot specify as climate-specific.

<sup>d</sup> Parties should explain in their biennial reports how they define funds as being climate-specific.

<sup>e</sup> This refers to funding for activities which are cross-cutting across mitigation and adaptation.

<sup>f</sup> Please specify.

<sup>g</sup> Multilateral climate change funds listed in paragraph 17(a) of the "UNFCCC biennial reporting guidelines for developed country Parties" in decision 2/CP.17.

<sup>h</sup> 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.

Table 7(b)

Provision of public financial support: contribution through bilateral, regional and other channels in 2011<sup>a</sup>

Recipient country/ region/project/programme <sup>b</sup>	Total amount		Status <sup>c</sup>	Funding source <sup>e</sup>	Financial instrument <sup>e</sup>	Type of support <sup>g,h</sup>	Sector <sup>d</sup>	Additional information <sup>f</sup>
	Climate-specific <sup>f</sup>							
	European euro - EUR	USD						
Total contributions through bilateral, regional and other channels	300,000.00	405,510.00						
Ethiopia / Integrated environmental intervention in Meki's rural area providing biogas, compost, soil and water conservation	18,767.00	25,367.35	Provided	Other (Funds budget for Fast Start Finance by the Government of Malta)	Grant	Cross- cutting	Energy, Agriculture, Water and sanitation	
United Republic of Tanzania / Construction of a Biogas Plant and a delivery system at Makiungu Hospital	25,000.00	33,792.50	Provided	Other (Funds budget for Fast Start Finance by the Government of Malta)	Grant	Cross- cutting	Energy	
Uganda / Rainwater Harvesting for natural resource management and sustainable development	50,550.00	68,328.44	Provided	Other (Funds budget for Fast Start Finance by the Government of Malta)	Grant	Adaptation	Water and sanitation	
Ethiopia / Community Managed Environmental Sanitation and Biogas Development	32,570.00	44,024.87	Provided	Other (Funds budget for Fast Start Finance by the Government of Malta)	Grant	Cross- cutting	Energy, Water and sanitation	
Ghana / Bore-hole project for the Hope4Change Health Centre in Ghana and neighbouring villages and solar water heating project	113,295.00	153,140.85	Provided	Other (Funds budget for Fast Start Finance by the Government of Malta)	Grant	Cross- cutting	Energy, Water and sanitation	
Uganda / Installation of a mini-grid as a means of establishing renewable energy sources in the Kids of Africa orphanage in Garuga/Entebbe	59,818.00	80,855.99	Provided	Other (Funds budget for Fast Start Finance by the Government of Malta)	Grant	Mitigation	Energy	

Abbreviations: ODA = official development assistance, OOF = other official flows; USD = United States dollars.

<sup>a</sup> Parties should fill in a separate table for each year, namely 2011 and 2012, where 2014 is the reporting year.

<sup>b</sup> Parties should report, to the extent possible, on details contained in this table.

<sup>c</sup> 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.

<sup>d</sup> Parties may select several applicable sectors. Parties may report sectoral distribution, as applicable, under "Other".

<sup>e</sup> Parties should report, as appropriate, on project details and the implementing agency.

<sup>f</sup> Parties should explain in their biennial reports how they define funds as being climate-specific.

<sup>g</sup> Please specify.

<sup>h</sup> Cross-cutting type of support 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 2012<sup>a</sup>

Recipient country/ region/project/programme <sup>b</sup>	Total amount		Status <sup>c</sup>	Funding source <sup>e</sup>	Financial instrument <sup>e</sup>	Type of support <sup>e, h</sup>	Sector <sup>d</sup>	Additional information <sup>e</sup>
	Climate-specific <sup>f</sup>							
	European euro - EUR	USD						
Total contributions through bilateral, regional and other channels	299,998.00	405,609.15						
Philippines / Construction of water canals and access roads	24,334.00	32,913.09	Provided	Other (Funds budget for Fast Start Finance by the Government of Malta)	Grant	Cross- cutting	Water and sanitation	
Kenya / Construction of boreholes	39,500.00	53,404.00	Provided	Other (Funds budget for Fast Start Finance by the Government of Malta)	Grant	Adaptation	Water and sanitation	
India / Finance for Solar Lighting for two educational institutions	37,691.00	50,958.23	Provided	Other (Funds budget for Fast Start Finance by the Government of Malta)	Grant	Cross- cutting	Energy	
Madagascar / Water Harvesting Project	14,752.00	19,944.00	Provided	Other (Funds budget for Fast Start Finance by the Government of Malta)	Grant	Cross- cutting	Water and sanitation	
Ghana / Biogas system for the production of gas for cooking in a hospital and hospital residences	93,991.00	127,075.83	Provided	Other (Funds budget for Fast Start Finance by the Government of Malta)	Grant	Cross- cutting	Energy, Other (Waste management )	
Uganda / Water and food scarcity projects	56,525.00	76,421.00	Provided	Other (Funds budget for Fast Start Finance by the Government of Malta)	Grant	Adaptation	Water and sanitation	
Ethiopia / Environmental education, model organic farming and water harvesting	33,205.00	44,893.00	Provided	Other (Funds budget for Fast Start Finance by the Government of Malta)	Grant	Mitigation	Agriculture, Energy, Water and sanitation	

*Abbreviations:* ODA = official development assistance, OOF = other official flows; USD = United States dollars.

<sup>a</sup> Parties should fill in a separate table for each year, namely 2011 and 2012, where 2014 is the reporting year.

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<sup>g</sup> Please specify.

<sup>h</sup> Cross-cutting type of support refers to funding for activities which are cross-cutting across mitigation and adaptation.