

BR CTF submission workbook

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Table 1

BGR_BR1_v3.0

Emission trends: summary ⁽¹⁾
(Sheet 1 of 3)

CRF: BGR_CRF__ v3.1

<i>GREENHOUSE GAS EMISSIONS</i>	Base year ^a	1990	1991	1992	1993	1994	1995	1996	1997
	<i>kt CO₂ eq</i>	<i>kt CO₂ eq</i>	kt CO ₂ eq	kt CO ₂ eq	kt CO ₂ eq	kt CO ₂ eq	kt CO ₂ eq	kt CO ₂ eq	kt CO ₂ eq
CO ₂ emissions including net CO ₂ from LULUCF	75,587.88	66,016.40	47,393.21	44,101.52	45,365.99	43,401.21	44,700.92	47,416.57	44,617.20
CO ₂ emissions excluding net CO ₂ from LULUCF	90,092.25	80,231.67	61,489.45	57,902.22	58,447.34	56,291.38	58,043.16	58,396.18	55,625.94
CH ₄ emissions including CH ₄ from LULUCF	17,260.77	16,972.28	15,718.35	14,586.39	12,991.26	11,579.36	10,999.22	10,731.03	10,144.99
CH ₄ emissions excluding CH ₄ from LULUCF	17,259.40	16,969.21	15,716.84	14,570.92	12,937.63	11,525.92	10,997.60	10,724.68	10,142.70
N ₂ O emissions including N ₂ O from LULUCF	14,744.32	12,499.52	9,695.12	8,181.48	7,500.58	7,426.96	6,953.51	6,736.06	6,456.80
N ₂ O emissions excluding N ₂ O from LULUCF	14,581.33	12,336.13	9,532.10	8,015.26	7,325.64	7,252.06	6,790.46	6,571.93	6,293.59
HFCs	NA, NO	NA, NO	0.72	0.00	0.01	0.02	2.39	4.20	6.38
PFCs	NA, NO	NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO
SF ₆	3.46	3.87	4.10	4.33	4.59	4.85	5.13	5.43	5.75
Total (including LULUCF)	107,596.42	95,492.07	72,811.50	66,873.73	65,862.42	62,412.39	62,661.17	64,893.30	61,231.11
Total (excluding LULUCF)	121,936.45	109,540.89	86,743.21	80,492.73	78,715.21	75,074.24	75,838.74	75,702.43	72,074.36

<i>GREENHOUSE GAS SOURCE AND SINK CATEGORIES</i>	Base year ^a	1990	1991	1992	1993	1994	1995	1996	1997
	<i>kt CO₂ eq</i>	<i>kt CO₂ eq</i>	kt CO ₂ eq	kt CO ₂ eq	kt CO ₂ eq	kt CO ₂ eq	kt CO ₂ eq	kt CO ₂ eq	kt CO ₂ eq
1. Energy	83,081.24	75,529.27	57,523.20	55,093.02	55,481.58	52,530.54	53,029.72	53,737.20	51,071.56
2. Industrial Processes	11,959.94	8,846.52	6,947.67	5,720.01	5,929.70	7,456.86	9,421.59	9,123.97	8,440.50
3. Solvent and Other Product Use	899.79	897.75	895.71	896.61	829.62	126.75	95.61	91.50	79.43
4. Agriculture	20,206.36	18,198.35	15,892.74	13,672.09	11,468.14	9,997.05	8,209.03	7,686.08	7,510.28
5. Land Use, Land-Use Change and Forestry ^b	-14,340.02	-14,048.81	-13,931.71	-13,619.01	-12,852.79	-12,661.84	-13,177.57	-10,809.13	-10,843.25
6. Waste	5,789.11	6,069.00	5,483.90	5,111.00	5,006.16	4,963.04	5,082.79	5,063.67	4,972.59
7. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total (including LULUCF)	107,596.42	95,492.07	72,811.50	66,873.73	65,862.42	62,412.39	62,661.17	64,893.30	61,231.11

Note: All footnotes for this table are given on sheet 3.¹ 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

BGR_BR1_v3.0

Emission trends: summary ⁽¹⁾
(Sheet 2 of 3)

CRF: BGR_CRF__ v3.1

<i>GREENHOUSE GAS EMISSIONS</i>	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
	<i>kt CO₂ eq</i>	<i>kt CO₂ eq</i>	<i>kt CO₂ eq</i>	<i>kt CO₂ eq</i>	<i>kt CO₂ eq</i>	<i>kt CO₂ eq</i>	<i>kt CO₂ eq</i>	<i>kt CO₂ eq</i>	<i>kt CO₂ eq</i>	<i>kt CO₂ eq</i>
CO ₂ emissions including net CO ₂ from LULUCF	41,654.50	35,200.12	36,231.78	40,264.32	36,956.49	41,297.62	40,074.41	41,202.27	43,144.67	48,072.15
CO ₂ emissions excluding net CO ₂ from LULUCF	52,635.69	46,158.87	45,522.77	49,255.75	46,260.33	50,504.60	49,433.08	50,304.58	51,718.95	55,478.71
CH ₄ emissions including CH ₄ from LULUCF	9,339.33	8,712.17	8,703.65	7,941.32	8,031.36	8,827.66	8,485.84	7,935.27	7,855.24	8,007.90
CH ₄ emissions excluding CH ₄ from LULUCF	9,318.76	8,687.70	8,532.67	7,881.77	8,012.13	8,812.58	8,482.47	7,931.00	7,844.30	7,879.67
N ₂ O emissions including N ₂ O from LULUCF	5,323.90	5,615.67	5,622.33	5,662.24	5,522.28	5,216.96	5,799.27	5,556.82	4,995.17	5,108.18
N ₂ O emissions excluding N ₂ O from LULUCF	5,156.51	5,447.39	5,420.55	5,485.94	5,355.20	5,050.83	5,635.82	5,393.17	4,829.99	4,916.18
HFCs	10.14	14.34	17.95	28.62	41.20	58.73	78.35	111.86	164.29	204.20
PFCs	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO
SF ₆	6.08	6.43	6.80	7.20	7.62	8.06	8.53	8.56	8.89	9.24
Total (including LULUCF)	56,333.94	49,548.73	50,582.51	53,903.71	50,558.95	55,409.02	54,446.40	54,814.78	56,168.26	61,401.68
Total (excluding LULUCF)	67,127.18	60,314.73	59,500.75	62,659.28	59,676.48	64,434.81	63,638.25	63,749.17	64,566.42	68,488.01

<i>GREENHOUSE GAS SOURCE AND SINK CATEGORIES</i>	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
	<i>kt CO₂ eq</i>	<i>kt CO₂ eq</i>	<i>kt CO₂ eq</i>	<i>kt CO₂ eq</i>	<i>kt CO₂ eq</i>	<i>kt CO₂ eq</i>	<i>kt CO₂ eq</i>	<i>kt CO₂ eq</i>	<i>kt CO₂ eq</i>	<i>kt CO₂ eq</i>
1. Energy	49,691.26	43,432.42	42,350.76	46,003.95	43,482.32	47,276.43	45,925.31	46,624.37	47,785.40	51,456.00
2. Industrial Processes	6,151.14	5,407.00	6,234.58	6,167.89	5,578.27	6,199.43	6,248.11	6,636.83	6,455.04	6,849.89
3. Solvent and Other Product Use	64.15	56.57	68.40	54.76	57.41	60.40	48.91	50.68	53.73	50.13
4. Agriculture	6,386.96	6,777.70	6,237.32	5,990.38	6,142.62	5,967.79	6,527.83	6,206.78	6,098.03	6,014.93
5. Land Use, Land-Use Change and Forestry ^b	-10,793.24	-10,765.99	-8,918.24	-8,755.57	-9,117.54	-9,025.79	-9,191.85	-8,934.39	-8,398.15	-7,086.33
6. Waste	4,833.66	4,641.04	4,609.69	4,442.30	4,415.86	4,930.76	4,888.09	4,230.51	4,174.21	4,117.06
7. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total (including LULUCF)	56,333.94	49,548.73	50,582.51	53,903.71	50,558.95	55,409.02	54,446.40	54,814.78	56,168.26	61,401.68

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

Emission trends: summary ⁽¹⁾
(Sheet 3 of 3)

CRF: BGR_CRF__ v3.1

<i>GREENHOUSE GAS EMISSIONS</i>	2008	2009	2010	2011	Change from base to latest reported year
	<i>kt CO₂ eq</i>	<i>kt CO₂ eq</i>	<i>kt CO₂ eq</i>	<i>kt CO₂ eq</i>	(%)
CO ₂ emissions including net CO ₂ from LULUCF	45,297.40	36,894.31	39,475.10	45,075.34	-40.37
CO ₂ emissions excluding net CO ₂ from LULUCF	53,760.94	45,453.85	47,770.50	53,243.42	-40.90
CH ₄ emissions including CH ₄ from LULUCF	7,745.10	7,367.81	7,379.82	7,703.98	-55.37
CH ₄ emissions excluding CH ₄ from LULUCF	7,729.04	7,361.11	7,360.55	7,682.83	-55.49
N ₂ O emissions including N ₂ O from LULUCF	5,294.39	4,804.07	5,014.45	4,963.90	-66.33
N ₂ O emissions excluding N ₂ O from LULUCF	5,128.04	4,639.86	4,847.37	4,796.38	-67.11
HFCs	315.05	340.36	360.88	395.74	100.00
PFCs	0.00	0.01	0.04	0.05	100.00
SF ₆	9.60	9.97	13.07	14.87	329.96
Total (including LULUCF)	58,661.54	49,416.54	52,243.36	58,153.88	-45.95
Total (excluding LULUCF)	66,942.68	57,805.17	60,352.40	66,133.29	-45.76

<i>GREENHOUSE GAS SOURCE AND SINK CATEGORIES</i>	2008	2009	2010	2011	Change from base to latest reported year
	<i>kt CO₂ eq</i>	<i>kt CO₂ eq</i>	<i>kt CO₂ eq</i>	<i>kt CO₂ eq</i>	(%)
1. Energy	50,677.36	44,593.46	46,741.63	52,203.74	-37.17
2. Industrial Processes	5,972.47	3,210.07	3,563.08	3,977.93	-66.74
3. Solvent and Other Product Use	51.10	47.84	45.78	41.29	-95.41
4. Agriculture	6,186.88	5,986.25	6,185.58	6,148.50	-69.57
5. Land Use, Land-Use Change and Forestry ^b	-8,281.14	-8,388.63	-8,109.04	-7,979.42	-44.36
6. Waste	4,054.87	3,967.56	3,816.33	3,761.83	-35.02
7. Other	NA	NA	NA	NA	0.00
Total (including LULUCF)	58,661.54	49,416.54	52,243.36	58,153.88	-45.95

Notes:

(1) Further detailed information could be found in the common reporting format tables of the Party's greenhouse gas inventory, namely "Emission trends (CO₂)", "Emission trends (CH₄)", "Emission trends (N₂O)" and "Emission trends (HFCs, PFCs and SF₆)", which is included in an annex to this biennial report.

(2) 2011 is the latest reported inventory year.

(3) 1 kt CO₂ eq equals 1 Gg CO₂ eq.

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

^a 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.

^b Includes net CO₂, CH₄ and N₂O from LULUCF.

Emission trends (CO₂)
(Sheet 1 of 3)

CRF: BGR_CRF__ v3.1

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year ^a	1990	1991	1992	1993	1994	1995	1996	1997
	kt	kt	kt	kt	kt	kt	kt	kt	kt
1. Energy	79,349.99	72,288.33	54,892.97	52,345.45	52,636.61	49,743.92	50,031.38	50,725.09	48,293.60
A. Fuel Combustion (Sectoral Approach)	79,344.98	72,284.19	54,889.16	52,340.75	52,631.10	49,739.30	50,026.61	50,721.24	48,290.32
1. Energy Industries	41,967.24	38,661.46	30,343.18	28,600.78	28,901.38	26,610.00	27,119.83	26,933.80	28,950.92
2. Manufacturing Industries and Construction	17,477.04	19,538.76	15,324.50	14,593.24	13,549.19	13,760.62	14,609.47	15,078.63	12,044.44
3. Transport	7,204.65	6,578.22	3,808.39	3,991.18	4,498.01	4,115.48	4,369.99	4,300.18	4,331.91
4. Other Sectors	6,198.48	7,476.41	5,365.50	5,097.33	5,605.80	5,207.13	3,873.14	4,334.12	2,934.06
5. Other	6,497.57	29.34	47.60	58.22	76.73	46.06	54.18	74.51	29.00
B. Fugitive Emissions from Fuels	5.00	4.14	3.81	4.69	5.51	4.62	4.77	3.85	3.28
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	5.00	4.14	3.81	4.69	5.51	4.62	4.77	3.85	3.28
2. Industrial Processes	9,856.62	7,058.42	5,713.25	4,673.96	4,993.56	6,435.46	7,926.00	7,591.99	7,266.73
A. Mineral Products	4,373.68	3,906.81	2,586.34	2,008.83	1,962.88	2,408.68	3,239.55	3,238.07	2,621.89
B. Chemical Industry	1,782.66	1,768.89	1,611.78	1,249.05	1,127.11	1,303.30	1,548.40	1,536.54	1,315.61
C. Metal Production	3,700.29	1,382.71	1,515.13	1,416.08	1,903.58	2,723.49	3,138.05	2,817.39	3,329.22
D. Other Production	NO	NO	NO	NO	NO	NO	NO	NO	NO
E. Production of Halocarbons and SF6									
F. Consumption of Halocarbons and SF6									
G. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO
3. Solvent and Other Product Use	866.61	864.57	862.53	863.43	796.31	90.80	64.30	57.90	44.24
4. Agriculture									
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									
5. Land Use, Land-Use Change and Forestry	-14,504.38	-14,215.27	-14,096.24	-13,800.71	-13,081.36	-12,890.18	-13,342.24	-10,979.61	-11,008.75
A. Forest Land	-14,345.18	-14,374.48	-14,408.75	-14,288.10	-13,851.35	-13,886.87	-14,451.50	-12,192.25	-12,204.07
B. Cropland	544.27	862.67	1,015.97	1,190.86	1,473.46	1,700.16	1,812.73	1,916.11	1,898.79
C. Grassland	-786.64	-786.64	-786.64	-786.64	-786.64	-786.64	-786.64	-786.64	-786.64
D. Wetlands	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
E. Settlements	83.17	83.17	83.17	83.17	83.17	83.17	83.17	83.17	83.17
F. Other Land	NO	NO	NO	NO	NO	NO	NO	NO	NO
G. Other	NE	NE	NE	NE	NE	NE	NE	NE	NE
6. Waste	19.04	20.35	20.71	19.39	20.86	21.20	21.49	21.20	21.38
A. Solid Waste Disposal on Land	NO	NO	NO	NO	NO	NO	NO	NO	NO
B. Waste-water Handling									
C. Waste Incineration	19.04	20.35	20.71	19.39	20.86	21.20	21.49	21.20	21.38
D. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO
7. Other (as specified in the summary table in CRF)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total CO₂ emissions including net CO₂ from LULUCF	75,587.88	66,016.40	47,393.21	44,101.52	45,365.99	43,401.21	44,700.92	47,416.57	44,617.20
Total CO₂ emissions excluding net CO₂ from LULUCF	90,092.25	80,231.67	61,489.45	57,902.22	58,447.34	56,291.38	58,043.16	58,396.18	55,625.94
Memo Items:									
International Bunkers	1,528.48	895.95	1,393.35	1,684.44	1,942.23	1,735.37	1,760.12	1,336.87	467.86
Aviation	583.35	713.28	467.67	839.86	1,125.83	912.90	906.30	594.81	439.65
Marine	945.12	182.66	925.68	844.57	816.40	822.48	853.82	742.06	28.21
Multilateral Operations	NO	NO	NO	NO	NO	NO	NO	NO	NO
CO₂ Emissions from Biomass	889.39	808.75	660.80	733.94	662.37	755.22	945.95	1,028.83	1,194.48

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

Table 1 (a)
Emission trends (CO₂)
(Sheet 2 of 3)

BGR_BR1_v3.0

CRF: BGR_CRF__ v3.1

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
	kt	kt	kt	kt	kt	kt	kt	kt	kt	kt
1. Energy	47,153.62	41,317.14	40,089.77	43,938.11	41,392.85	45,063.59	44,076.91	44,669.01	45,891.46	49,427.63
A. Fuel Combustion (Sectoral Approach)	47,150.38	41,313.64	40,086.68	43,935.10	41,389.84	45,061.12	44,060.68	44,644.19	45,867.44	49,413.34
1. Energy Industries	27,748.66	24,134.62	23,976.71	27,841.81	25,184.89	27,057.95	26,753.34	26,933.79	27,245.08	30,552.61
2. Manufacturing Industries and Construction	10,803.76	8,813.65	8,445.77	8,419.90	7,936.37	8,999.78	8,318.39	8,025.39	8,085.18	8,768.98
3. Transport	5,482.42	5,718.16	5,492.45	5,662.04	5,897.25	6,490.43	6,893.11	7,578.61	8,197.19	8,024.99
4. Other Sectors	3,102.99	2,604.10	2,160.06	1,998.63	2,362.17	2,512.96	2,095.84	2,106.39	2,339.99	2,066.77
5. Other	12.55	43.11	11.69	12.72	9.16	NO	NO	NO	NO	NO
B. Fugitive Emissions from Fuels	3.24	3.50	3.10	3.01	3.02	2.48	16.22	24.82	24.02	14.29
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	3.24	3.50	3.10	3.01	3.02	2.48	16.22	24.82	24.02	14.29
2. Industrial Processes	5,421.51	4,793.13	5,338.63	5,260.43	4,810.96	5,372.86	5,268.82	5,555.57	5,746.87	5,990.37
A. Mineral Products	1,991.95	1,816.01	2,120.11	2,256.93	2,272.35	2,343.27	2,594.58	2,808.80	2,939.66	3,460.41
B. Chemical Industry	723.92	496.61	830.22	727.88	464.96	446.75	595.31	647.08	501.38	532.32
C. Metal Production	2,705.63	2,480.51	2,388.30	2,275.62	2,073.65	2,582.83	2,078.93	2,099.69	2,305.83	1,997.63
D. Other Production	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
E. Production of Halocarbons and SF6										
F. Consumption of Halocarbons and SF6										
G. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
3. Solvent and Other Product Use	25.15	19.70	31.39	16.97	17.21	23.63	16.95	23.94	27.86	25.28
4. Agriculture										
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										
5. Land Use, Land-Use Change and Forestry	-10,981.19	-10,958.75	-9,291.00	-8,991.43	-9,303.84	-9,206.99	-9,358.66	-9,102.31	-8,574.28	-7,406.56
A. Forest Land	-11,972.07	-11,893.76	-10,343.03	-10,180.73	-10,604.51	-10,695.86	-10,811.23	-10,819.15	-10,297.54	-9,087.20
B. Cropland	1,694.34	1,638.48	1,755.50	1,786.98	1,854.25	2,025.87	1,970.45	2,107.98	2,062.13	1,913.29
C. Grassland	-786.64	-786.64	-786.64	-786.64	-786.64	-786.64	-786.64	-786.64	-786.64	-786.64
D. Wetlands	NE, NO	NE, NO	NE, NO	90.83	103.11	115.14	127.12	139.59	151.64	163.97
E. Settlements	83.17	83.17	83.17	98.13	129.95	134.50	141.64	255.91	296.13	390.01
F. Other Land	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
G. Other	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
6. Waste	35.42	28.89	62.99	40.24	39.32	44.52	70.40	56.06	52.77	35.44
A. Solid Waste Disposal on Land	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
B. Waste-water Handling										
C. Waste Incineration	35.42	28.89	62.99	40.24	39.32	44.52	70.40	56.06	52.77	35.44
D. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
7. Other (as specified in the summary table in CRF)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total CO2 emissions including net CO2 from LULUCF	41,654.50	35,200.12	36,231.78	40,264.32	36,956.49	41,297.62	40,074.41	41,202.27	43,144.67	48,072.15
Total CO2 emissions excluding net CO2 from LULUCF	52,635.69	46,158.87	45,522.77	49,255.75	46,260.33	50,504.60	49,433.08	50,304.58	51,718.95	55,478.71
Memo Items:										
International Bunkers	608.95	236.13	443.07	614.25	704.34	909.47	823.31	912.66	872.27	711.72
Aviation	389.54	211.09	242.46	313.39	375.22	480.05	462.85	567.88	543.42	548.73
Marine	219.41	25.04	200.60	300.87	329.12	429.42	360.46	344.79	328.86	162.99
Multilateral Operations	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CO2 Emissions from Biomass	1,933.34	2,017.01	2,619.01	2,536.24	3,033.30	3,325.95	3,474.06	3,519.83	3,756.58	3,535.58

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

Emission trends (CO₂)
(Sheet 3 of 3)

CRF: BGR_CRF__ v3.1

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2008	2009	2010	2011	Change from base to latest reported year
	kt	kt	kt	kt	%
1. Energy	48,646.26	42,809.55	44,809.14	49,878.66	-37.14
A. Fuel Combustion (Sectoral Approach)	48,635.40	42,807.31	44,804.55	49,858.21	-37.16
1. Energy Industries	32,072.19	29,504.57	31,419.33	36,211.18	-13.72
2. Manufacturing Industries and Construction	6,333.99	3,637.28	3,800.16	3,639.54	-79.18
3. Transport	8,407.91	8,084.45	7,859.56	8,036.21	11.54
4. Other Sectors	1,821.32	1,581.01	1,725.49	1,971.28	-68.20
5. Other	NO	NO	NO	NO	-100.00
B. Fugitive Emissions from Fuels	10.85	2.24	4.59	20.44	308.69
1. Solid Fuels	NA, NO	NA, NO	NA, NO	NA, NO	0.00
2. Oil and Natural Gas	10.85	2.24	4.59	20.44	308.69
2. Industrial Processes	5,045.63	2,585.79	2,921.58	3,332.83	-66.19
A. Mineral Products	3,474.00	2,205.85	2,468.47	2,720.81	-37.79
B. Chemical Industry	553.42	299.48	398.08	543.61	-69.51
C. Metal Production	1,018.20	80.46	55.03	68.42	-98.15
D. Other Production	NO	NO	NO	NO	0.00
E. Production of Halocarbons and SF6					
F. Consumption of Halocarbons and SF6					
G. Other	NO	NO	NO	NO	0.00
3. Solvent and Other Product Use	25.87	24.62	25.61	22.28	-97.43
4. Agriculture					
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					
5. Land Use, Land-Use Change and Forestry	-8,463.55	-8,559.55	-8,295.41	-8,168.08	-43.69
A. Forest Land	-10,261.49	-10,400.00	-10,285.04	-10,276.82	-28.36
B. Cropland	1,898.87	2,027.12	2,000.18	2,159.79	296.82
C. Grassland	-786.64	-786.64	-786.64	-786.64	0.00
D. Wetlands	176.04	188.87	200.68	212.42	100.00
E. Settlements	509.67	411.11	575.40	523.16	529.04
F. Other Land	NO	NO	NO	NO	0.00
G. Other	NE	NE	NE	NE	0.00
6. Waste	43.19	33.89	14.17	9.66	-49.26
A. Solid Waste Disposal on Land	NO	NO	NO	NO	0.00
B. Waste-water Handling					
C. Waste Incineration	43.19	33.89	14.17	9.66	-49.26
D. Other	NO	NO	NO	NO	0.00
7. Other (as specified in the summary table in CRF)	NA	NA	NA	NA	0.00
Total CO₂ emissions including net CO₂ from LULUCF	45,297.40	36,894.31	39,475.10	45,075.34	-40.37
Total CO₂ emissions excluding net CO₂ from LULUCF	53,760.94	45,453.85	47,770.50	53,243.42	-40.90
Memo Items:					
International Bunkers	1,019.82	1,105.91	810.87	748.80	-51.01
Aviation	638.04	459.27	505.47	511.70	-12.28
Marine	381.79	646.64	305.41	237.10	-74.91
Multilateral Operations	NO	NO	NO	NO	0.00
CO₂ Emissions from Biomass	3,725.40	3,674.25	4,349.51	4,601.02	417.32

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

^a 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.

^b 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 (+).

Emission trends (CH₄)

(Sheet 1 of 3)

CRF: BGR_CRF_ v3.1

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year ^a	1990	1991	1992	1993	1994	1995	1996	1997
	kt	kt	kt	kt	kt	kt	kt	kt	kt
1. Energy	162.06	138.02	113.86	119.25	119.73	115.19	121.41	121.55	114.42
A. Fuel Combustion (Sectoral Approach)	19.92	16.82	13.07	15.17	15.61	12.96	12.02	13.61	11.22
1. Energy Industries	0.75	0.54	0.40	0.36	0.37	0.33	0.33	0.34	0.34
2. Manufacturing Industries and Construction	1.21	1.15	1.03	0.95	0.92	0.97	1.06	1.09	0.92
3. Transport	4.02	3.90	1.94	2.13	2.29	2.11	2.13	1.75	1.27
4. Other Sectors	13.51	11.23	9.69	11.58	11.86	9.35	8.19	10.23	8.40
5. Other	0.42	0.00	0.01	0.14	0.18	0.19	0.31	0.20	0.29
B. Fugitive Emissions from Fuels	142.14	121.20	100.80	104.08	104.12	102.23	109.39	107.94	103.20
1. Solid Fuels	88.56	82.77	70.49	78.01	77.81	73.04	75.95	74.13	67.12
2. Oil and Natural Gas	53.58	38.42	30.31	26.07	26.31	29.19	33.45	33.81	36.08
2. Industrial Processes	4.29	3.36	2.46	2.33	2.70	3.52	3.87	3.62	3.87
A. Mineral Products	NO	NO	NO	NO	NO	NO	NO	NO	NO
B. Chemical Industry	0.44	0.35	0.24	0.24	0.27	0.30	0.36	0.35	0.35
C. Metal Production	3.49	2.76	2.07	1.95	2.27	3.03	3.31	3.07	3.32
D. Other Production									
E. Production of Halocarbons and SF6									
F. Consumption of Halocarbons and SF6									
G. Other	0.36	0.25	0.14	0.14	0.17	0.18	0.20	0.20	0.20
3. Solvent and Other Product Use									
4. Agriculture	392.20	389.73	382.93	340.64	267.07	205.61	167.34	155.30	138.75
A. Enteric Fermentation	190.86	181.46	174.53	162.52	136.90	108.99	91.93	87.40	84.79
B. Manure Management	194.27	202.36	203.23	175.03	127.97	95.31	73.77	66.23	51.49
C. Rice Cultivation	5.44	4.24	3.28	1.81	1.25	0.33	0.55	1.04	1.52
D. Agricultural Soils	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
E. Prescribed Burning of Savannas	NA	NA	NA	NA	NA	NA	NA	NA	NA
F. Field Burning of Agricultural Residues	1.62	1.67	1.89	1.28	0.94	0.99	1.09	0.63	0.95
G. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA
5. Land Use, Land-Use Change and Forestry	0.06	0.15	0.07	0.74	2.55	2.54	0.08	0.30	0.11
A. Forest Land	0.06	0.15	0.07	0.74	2.55	2.54	0.08	0.30	0.11
B. Cropland	NO	NO	NO	NO	NO	NO	NO	NO	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	263.33	276.96	249.17	231.63	226.57	224.54	231.07	230.23	225.95
A. Solid Waste Disposal on Land	155.67	158.38	159.51	160.48	161.37	162.18	162.91	163.56	165.60
B. Waste-water Handling	107.66	118.58	89.65	71.16	65.21	62.36	68.16	66.67	60.35
C. Waste Incineration	NO	NO	NO	NO	NO	NO	NO	NO	NO
D. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO
7. Other (as specified in the summary table in CRF)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total CH4 emissions including CH4 from LULUCF	821.94	808.20	748.49	694.59	618.63	551.40	523.77	511.00	483.09
Total CH4 emissions excluding CH4 from LULUCF	821.88	808.06	748.42	693.85	616.08	548.85	523.70	510.70	482.99
Memo Items:									
International Bunkers	0.11	0.03	0.12	0.11	0.11	0.11	0.11	0.10	0.01
Aviation	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00
Marine	0.10	0.02	0.11	0.11	0.10	0.10	0.11	0.09	0.00
Multilateral Operations	NO	NO	NO	NO	NO	NO	NO	NO	NO
CO2 Emissions from Biomass									

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

Emission trends (CH₄)

(Sheet 2 of 3)

CRF: BGR_CRF__ v3.1

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
	kt	kt	kt	kt	kt	kt	kt	kt	kt	kt
1. Energy	100.35	81.51	90.36	81.65	82.52	88.02	75.53	80.45	77.14	83.17
A. Fuel Combustion (Sectoral Approach)	13.47	11.46	11.79	10.29	13.07	14.17	13.25	12.88	13.61	12.74
1. Energy Industries	0.32	0.28	0.27	0.31	0.28	0.30	0.29	0.30	0.30	0.33
2. Manufacturing Industries and Construction	0.80	0.66	0.66	0.68	0.63	0.78	0.75	0.75	0.76	0.81
3. Transport	1.53	1.42	1.24	1.12	1.11	1.07	0.93	0.92	0.92	0.83
4. Other Sectors	10.51	8.90	9.62	8.07	10.95	12.02	11.17	10.91	11.63	10.76
5. Other	0.32	0.20	0.00	0.11	0.10	NO	0.11	NO	NO	NO
B. Fugitive Emissions from Fuels	86.88	70.04	78.58	71.36	69.44	73.85	62.28	67.57	63.52	70.43
1. Solid Fuels	57.28	45.64	48.93	44.39	45.09	49.08	33.30	33.93	29.61	36.55
2. Oil and Natural Gas	29.60	24.41	29.65	26.97	24.35	24.78	28.98	33.64	33.91	33.88
2. Industrial Processes	3.12	2.66	2.71	2.63	2.30	2.82	2.36	2.24	2.14	1.93
A. Mineral Products	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
B. Chemical Industry	0.31	0.25	0.27	0.27	0.24	0.27	0.20	0.18	0.13	0.14
C. Metal Production	2.63	2.33	2.43	2.36	2.06	2.55	2.16	2.06	2.01	1.79
D. Other Production										
E. Production of Halocarbons and SF6										
F. Consumption of Halocarbons and SF6										
G. Other	0.18	0.07	NO	NO	NO	NO	NO	NO	NO	NO
3. Solvent and Other Product Use										
4. Agriculture	121.84	119.78	107.25	91.22	97.99	105.86	106.82	105.31	107.00	104.40
A. Enteric Fermentation	82.70	85.63	83.23	71.69	74.01	76.77	75.55	73.36	71.38	67.30
B. Manure Management	36.69	32.72	21.89	17.12	20.84	26.12	27.94	29.15	32.67	34.03
C. Rice Cultivation	1.60	0.57	1.43	1.56	2.09	2.26	2.16	1.87	2.03	2.58
D. Agricultural Soils	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
E. Prescribed Burning of Savannas	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
F. Field Burning of Agricultural Residues	0.84	0.87	0.70	0.85	1.04	0.70	1.18	0.93	0.92	0.49
G. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5. Land Use, Land-Use Change and Forestry	0.98	1.17	8.14	2.84	0.92	0.72	0.16	0.20	0.52	6.11
A. Forest Land	0.98	1.17	8.14	2.84	0.92	0.72	0.16	0.20	0.52	6.11
B. Cropland	NO	NO	NO	NO	NO	NO	NO	NO	NO	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	218.44	209.75	206.00	199.82	198.72	222.95	219.21	189.67	187.25	185.72
A. Solid Waste Disposal on Land	164.85	163.43	163.03	162.39	159.94	157.55	155.22	153.04	150.30	148.29
B. Waste-water Handling	53.59	46.32	42.97	37.43	38.78	65.40	63.99	36.63	36.95	37.43
C. Waste Incineration	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
D. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
7. Other (as specified in the summary table in CRF)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total CH4 emissions including CH4 from LULUCF	444.73	414.87	414.46	378.16	382.45	420.36	404.09	377.87	374.06	381.33
Total CH4 emissions excluding CH4 from LULUCF	443.75	413.70	406.32	375.32	381.53	419.65	403.93	377.67	373.54	375.22
Memo Items:										
International Bunkers	0.03	0.01	0.04	0.05	0.05	0.06	0.05	0.05	0.04	0.03
Aviation	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01
Marine	0.02	0.00	0.02	0.03	0.03	0.04	0.03	0.03	0.03	0.02
Multilateral Operations	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CO2 Emissions from Biomass										

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

Emission trends (CH₄)
(Sheet 3 of 3)

CRF: BGR_CRF__ v3.1

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2008	2009	2010	2011	Change from base to latest reported year
	kt	kt	kt	kt	%
1. Energy	83.27	73.19	79.62	97.26	-39.99
A. Fuel Combustion (Sectoral Approach)	12.81	11.84	13.23	14.32	-28.12
1. Energy Industries	0.35	0.34	0.36	0.40	-46.83
2. Manufacturing Industries and Construction	0.64	0.40	0.53	0.56	-54.24
3. Transport	0.78	0.74	0.69	0.64	-84.03
4. Other Sectors	11.03	10.36	11.65	12.72	-5.86
5. Other	NO	NO	NO	NO	-100.00
B. Fugitive Emissions from Fuels	70.46	61.35	66.39	82.94	-41.65
1. Solid Fuels	37.92	37.98	41.10	50.92	-42.50
2. Oil and Natural Gas	32.54	23.37	25.29	32.02	-40.24
2. Industrial Processes	1.03	0.06	NA, NO	NA, NO	-100.00
A. Mineral Products	NO	NO	NO	NO	0.00
B. Chemical Industry	0.12	0.06	NA, NO	NA, NO	-100.00
C. Metal Production	0.90	NA, NO	NA, NO	NA, NO	-100.00
D. Other Production					
E. Production of Halocarbons and SF6					
F. Consumption of Halocarbons and SF6					
G. Other	NO	NO	NO	NO	-100.00
3. Solvent and Other Product Use					
4. Agriculture	101.49	98.49	97.91	98.11	-74.99
A. Enteric Fermentation	66.04	62.80	61.26	62.36	-67.33
B. Manure Management	32.35	31.36	30.70	29.86	-84.63
C. Rice Cultivation	2.02	3.32	4.79	4.73	-13.00
D. Agricultural Soils	NA, NO	NA, NO	NA, NO	NA, NO	0.00
E. Prescribed Burning of Savannas	NA	NA	NA	NA	0.00
F. Field Burning of Agricultural Residues	1.08	1.01	1.16	1.16	-28.72
G. Other	NA	NA	NA	NA	0.00
5. Land Use, Land-Use Change and Forestry	0.76	0.32	0.92	1.01	1,450.71
A. Forest Land	0.76	0.32	0.92	1.01	1,450.71
B. Cropland	NO	NO	NO	NO	0.00
C. Grassland	NO	NO	NO	NO	0.00
D. Wetlands	NO	NO	NO	NO	0.00
E. Settlements	NO	NO	NO	NO	0.00
F. Other Land	NO	NO	NO	NO	0.00
G. Other	NO	NO	NO	NO	0.00
6. Waste	182.27	178.78	172.98	170.49	-35.26
A. Solid Waste Disposal on Land	146.01	147.03	140.02	138.08	-11.30
B. Waste-water Handling	36.26	31.75	32.96	32.07	-70.21
C. Waste Incineration	NO	NO	NO	NO	0.00
D. Other	NO	NO	NO	0.33	100.00
7. Other (as specified in the summary table in CRF)	NA	NA	NA	NA	0.00
Total CH₄ emissions including CH₄ from LULUCF	368.81	350.85	351.42	366.86	-55.37
Total CH₄ emissions excluding CH₄ from LULUCF	368.05	350.53	350.50	365.85	-55.49
Memo Items:					
International Bunkers	0.05	0.08	0.04	0.04	-67.65
Aviation	0.01	0.01	0.01	0.01	121.12
Marine	0.04	0.07	0.03	0.03	-75.04
Multilateral Operations	NO	NO	NO	NO	0.00
CO₂ Emissions from Biomass					

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

^a 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.

Emission trends (N₂O)
(Sheet 1 of 3)

CRF: BGR_CRF__ v3.1

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year ^a	1990	1991	1992	1993	1994	1995	1996	1997
	kt	kt	kt	kt	kt	kt	kt	kt	kt
1. Energy	1.06	1.11	0.77	0.79	1.07	1.19	1.45	1.48	1.21
A. Fuel Combustion (Sectoral Approach)	1.06	1.11	0.77	0.79	1.07	1.19	1.45	1.48	1.21
1. Energy Industries	0.43	0.42	0.34	0.33	0.35	0.32	0.32	0.31	0.34
2. Manufacturing Industries and Construction	0.19	0.15	0.12	0.11	0.10	0.10	0.10	0.11	0.10
3. Transport	0.29	0.43	0.23	0.26	0.54	0.69	0.95	0.98	0.70
4. Other Sectors	0.10	0.11	0.08	0.08	0.08	0.08	0.07	0.08	0.06
5. Other	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B. Fugitive Emissions from Fuels	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1. Solid Fuels	NA	NA	NA	NA	NA	NA	NA	NA	NA
2. Oil and Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2. Industrial Processes	6.48	5.53	3.80	3.20	2.82	3.04	4.54	4.67	3.49
A. Mineral Products	NO	NO	NO	NO	NO	NO	NO	NO	NO
B. Chemical Industry	6.48	5.53	3.80	3.20	2.82	3.04	4.54	4.67	3.49
C. Metal Production	NA	NA	NA	NA	NA	NA	NA	NA	NA
D. Other Production									
E. Production of Halocarbons and SF6									
F. Consumption of Halocarbons and SF6									
G. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO
3. Solvent and Other Product Use	0.11	0.11	0.11	0.11	0.11	0.12	0.10	0.11	0.11
4. Agriculture	38.61	32.30	25.33	21.03	18.90	18.32	15.14	14.27	14.83
A. Enteric Fermentation									
B. Manure Management	5.28	5.03	4.69	4.20	3.57	3.11	2.79	2.62	2.52
C. Rice Cultivation									
D. Agricultural Soils	33.28	27.23	20.58	16.79	15.30	15.18	12.32	11.64	12.28
E. Prescribed Burning of Savannas	NA	NA	NA	NA	NA	NA	NA	NA	NA
F. Field Burning of Agricultural Residues	0.05	0.05	0.06	0.04	0.03	0.03	0.03	0.02	0.03
G. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA
5. Land Use, Land-Use Change and Forestry	0.53	0.53	0.53	0.54	0.56	0.56	0.53	0.53	0.53
A. Forest Land	0.00	0.00	0.00	0.01	0.04	0.04	0.00	0.00	0.00
B. Cropland	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
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	0.77	0.75	0.74	0.73	0.73	0.73	0.67	0.67	0.67
A. Solid Waste Disposal on Land									
B. Waste-water Handling	0.75	0.72	0.72	0.71	0.71	0.70	0.65	0.64	0.64
C. Waste Incineration	0.02	0.03	0.03	0.02	0.03	0.03	0.03	0.03	0.03
D. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO
7. Other (as specified in the summary table in CRF)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total N2O emissions including N2O from LULUCF	47.56	40.32	31.27	26.39	24.20	23.96	22.43	21.73	20.83
Total N2O emissions excluding N2O from LULUCF	47.04	39.79	30.75	25.86	23.63	23.39	21.90	21.20	20.30
Memo Items:									
International Bunkers	0.44	0.22	0.77	0.74	0.75	0.76	0.76	0.65	0.01
Aviation	0.02	0.02	0.01	0.02	0.03	0.03	0.03	0.02	0.01
Marine	0.43	0.20	0.75	0.72	0.72	0.73	0.73	0.64	0.00
Multilateral Operations	NO	NO	NO	NO	NO	NO	NO	NO	NO
CO2 Emissions from Biomass									

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

Emission trends (N₂O)
(Sheet 2 of 3)

CRF: BGR_CRF__ v3.1

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
	kt	kt	kt	kt	kt	kt	kt	kt	kt	kt
1. Energy	1.39	1.30	1.17	1.13	1.15	1.18	0.85	0.86	0.88	0.91
A. Fuel Combustion (Sectoral Approach)	1.39	1.30	1.17	1.13	1.15	1.18	0.85	0.86	0.88	0.91
1. Energy Industries	0.33	0.28	0.29	0.34	0.31	0.33	0.33	0.33	0.34	0.39
2. Manufacturing Industries and Construction	0.09	0.07	0.06	0.07	0.07	0.09	0.08	0.08	0.08	0.08
3. Transport	0.87	0.85	0.71	0.62	0.65	0.63	0.30	0.32	0.33	0.32
4. Other Sectors	0.09	0.09	0.11	0.10	0.12	0.13	0.13	0.13	0.13	0.12
5. Other	0.00	0.00	0.00	0.00	0.00	NO	0.00	NO	NO	NO
B. Fugitive Emissions from Fuels	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1. Solid Fuels	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2. Oil and Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2. Industrial Processes	2.09	1.73	2.63	2.63	2.16	2.26	2.72	2.95	1.58	1.95
A. Mineral Products	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
B. Chemical Industry	2.09	1.73	2.63	2.63	2.16	2.26	2.72	2.95	1.58	1.95
C. Metal Production	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
D. Other Production										
E. Production of Halocarbons and SF6										
F. Consumption of Halocarbons and SF6										
G. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
3. Solvent and Other Product Use	0.13	0.12	0.12	0.12	0.13	0.12	0.10	0.09	0.08	0.08
4. Agriculture	12.35	13.75	12.85	13.14	13.18	12.08	13.82	12.89	12.42	12.33
A. Enteric Fermentation										
B. Manure Management	2.39	2.45	2.34	2.07	2.10	2.25	2.25	2.17	2.12	2.06
C. Rice Cultivation										
D. Agricultural Soils	9.94	11.27	10.49	11.06	11.05	9.80	11.53	10.69	10.27	10.25
E. Prescribed Burning of Savannas	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
F. Field Burning of Agricultural Residues	0.03	0.03	0.02	0.02	0.03	0.02	0.04	0.03	0.03	0.02
G. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5. Land Use, Land-Use Change and Forestry	0.54	0.54	0.65	0.57	0.54	0.54	0.53	0.53	0.53	0.62
A. Forest Land	0.02	0.02	0.13	0.04	0.01	0.01	0.00	0.00	0.01	0.09
B. Cropland	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
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	0.68	0.67	0.71	0.66	0.66	0.66	0.69	0.62	0.61	0.59
A. Solid Waste Disposal on Land										
B. Waste-water Handling	0.63	0.63	0.63	0.61	0.60	0.60	0.60	0.55	0.54	0.54
C. Waste Incineration	0.05	0.04	0.08	0.05	0.05	0.06	0.09	0.07	0.07	0.04
D. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
7. Other (as specified in the summary table in CRF)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total N2O emissions including N2O from LULUCF	17.17	18.12	18.14	18.27	17.81	16.83	18.71	17.93	16.11	16.48
Total N2O emissions excluding N2O from LULUCF	16.63	17.57	17.49	17.70	17.27	16.29	18.18	17.40	15.58	15.86
Memo Items:										
International Bunkers	0.02	0.01	0.01	0.02	0.02	0.03	0.02	0.03	0.03	0.02
Aviation	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02
Marine	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00
Multilateral Operations	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CO2 Emissions from Biomass										

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

Emission trends (N₂O)

(Sheet 3 of 3)

CRF: BGR_CRF__ v3.1

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2008	2009	2010	2011	Change from base to latest reported year
	kt	kt	kt	kt	%
1. Energy	0.91	0.80	0.84	0.91	-13.81
A. Fuel Combustion (Sectoral Approach)	0.91	0.80	0.84	0.91	-13.81
1. Energy Industries	0.40	0.36	0.39	0.45	4.78
2. Manufacturing Industries and Construction	0.06	0.04	0.06	0.06	-71.14
3. Transport	0.32	0.27	0.26	0.26	-12.96
4. Other Sectors	0.13	0.13	0.14	0.15	43.98
5. Other	NO	NO	NO	NO	-100.00
B. Fugitive Emissions from Fuels	0.00	0.00	0.00	0.00	-47.44
1. Solid Fuels	NA	NA	NA	NA	0.00
2. Oil and Natural Gas	0.00	0.00	0.00	0.00	-47.44
2. Industrial Processes	1.87	0.88	0.86	0.76	-88.34
A. Mineral Products	NO	NO	NO	NO	0.00
B. Chemical Industry	1.87	0.88	0.86	0.76	-88.34
C. Metal Production	NA	NA	NA	NA	0.00
D. Other Production					
E. Production of Halocarbons and SF ₆					
F. Consumption of Halocarbons and SF ₆					
G. Other	NO	NO	NO	NO	0.00
3. Solvent and Other Product Use	0.08	0.07	0.07	0.06	-42.70
4. Agriculture	13.08	12.64	13.32	13.19	-65.85
A. Enteric Fermentation					
B. Manure Management	1.95	1.83	1.75	1.73	-67.25
C. Rice Cultivation					
D. Agricultural Soils	11.10	10.77	11.54	11.42	-65.69
E. Prescribed Burning of Savannas	NA	NA	NA	NA	0.00
F. Field Burning of Agricultural Residues	0.03	0.03	0.04	0.04	-18.96
G. Other	NA	NA	NA	NA	0.00
5. Land Use, Land-Use Change and Forestry	0.54	0.53	0.54	0.54	2.78
A. Forest Land	0.01	0.00	0.01	0.02	1,450.71
B. Cropland	0.52	0.52	0.52	0.52	0.00
C. Grassland	NO	NO	NO	NO	0.00
D. Wetlands	NO	NO	NO	NO	0.00
E. Settlements	NO	NO	NO	NO	0.00
F. Other Land	NO	NO	NO	NO	0.00
G. Other	NO	NO	NO	NO	0.00
6. Waste	0.59	0.58	0.55	0.55	-28.39
A. Solid Waste Disposal on Land					
B. Waste-water Handling	0.54	0.53	0.53	0.52	-31.01
C. Waste Incineration	0.06	0.04	0.02	0.01	-51.22
D. Other	NO	NO	NO	0.03	100.00
7. Other (as specified in the summary table in CRF)	NA	NA	NA	NA	0.00
Total N₂O emissions including N₂O from LULUCF	17.08	15.50	16.18	16.01	-66.33
Total N₂O emissions excluding N₂O from LULUCF	16.54	14.97	15.64	15.47	-67.11
Memo Items:					
International Bunkers	0.08	0.22	0.18	0.12	-73.05
Aviation	0.02	0.01	0.02	0.02	-1.56
Marine	0.06	0.21	0.16	0.10	-75.78
Multilateral Operations	NO	NO	NO	NO	0.00
CO₂ Emissions from Biomass					

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

^a 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)

BGR_BR1_v3.0

Emission trends (HFCs, PFCs and SF₆)**(Sheet 1 of 3)**

CRF: BGR_CRF__ v3.1

<i>GREENHOUSE GAS SOURCE AND SINK CATEGORIES</i>	<i>Base year^a</i>	1990	1991	1992	1993	1994	1995	1996	1997
	<i>kt</i>	kt	kt	kt	kt	kt	kt	kt	kt
Emissions of HFCsc - (kt CO₂ eq)	NA, NO	NA, NO	0.72	0.00	0.01	0.02	2.39	4.20	6.38
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	0.00	0.00	0.00
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	0.00	0.00	0.00
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	0.00	0.00	0.00	0.00	0.00	0.00
HFC-152a	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	IE, NA, NO	IE, NA, NO	IE, 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	0.00	0.00	0.00
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-245ca	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
Unspecified mix of listed HFCs(4) - (Gg CO ₂ equivalent)	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
Emissions of PFCsc - (kt CO₂ eq)	NA, NO	NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO
CF ₄	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
C ₂ F ₆	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
C ₃ F ₈	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
C ₄ F ₁₀	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
c-C ₄ F ₈	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
C ₅ F ₁₂	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
C ₆ F ₁₄	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 ₂ equivalent)	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
Emissions of SF₆(3) - (Gg CO₂ equivalent)	3.46	3.87	4.10	4.33	4.59	4.85	5.13	5.43	5.75
SF ₆	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)

BGR_BR1_v3.0

Emission trends (HFCs, PFCs and SF₆)

(Sheet 2 of 3)

CRF: BGR_CRF__ v3.1

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
	kt	kt	kt	kt	kt	kt	kt	kt	kt	kt
Emissions of HFCsc - (kt CO₂ eq)	10.14	14.34	17.95	28.62	41.20	58.73	78.35	111.86	164.29	204.20
HFC-23	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
HFC-32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0.01	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	0.01	0.01	0.01	0.02	0.02	0.03	0.04	0.05	0.07	0.08
HFC-152a	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	0.00	0.00	0.00	0.08	0.22	0.30
HFC-143	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
HFC-143a	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HFC-227ea	NA, NO	NA, NO	NA, NO	0.00	0.00	0.00	0.00	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 HFCs(4) - (Gg CO ₂ equivalent)	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
Emissions of PFCsc - (kt CO₂ eq)	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO
CF ₄	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
C ₂ F ₆	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
C ₃ F ₈	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
C ₄ F ₁₀	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
c-C ₄ F ₈	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
C ₃ F ₁₂	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
C ₆ F ₁₄	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 ₂ equivalent)	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
Emissions of SF₆(3) - (Gg CO₂ equivalent)	6.08	6.43	6.80	7.20	7.62	8.06	8.53	8.56	8.89	9.24
SF ₆	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.

Emission trends (HFCs, PFCs and SF₆)**(Sheet 3 of 3)**

CRF: BGR_CRF__ v3.1

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2008	2009	2010	2011	Change from base to latest reported year
	kt	kt	kt	kt	%
Emissions of HFCsc - (kt CO₂ eq)	315.05	340.36	360.88	395.74	100.00
HFC-23	NA, NO	NA, NO	NA, NO	NA, NO	0.00
HFC-32	0.01	0.03	0.04	0.04	100.00
HFC-41	NA, NO	NA, NO	NA, NO	NA, NO	0.00
HFC-43-10mee	NA, NO	NA, NO	NA, NO	NA, NO	0.00
HFC-125	0.02	0.03	0.04	0.05	100.00
HFC-134	NA, NO	NA, NO	NA, NO	NA, NO	0.00
HFC-134a	0.15	0.12	0.12	0.13	100.00
HFC-152a	0.28	0.37	0.26	0.22	100.00
HFC-143	NA, NO	NA, NO	NA, NO	NA, NO	0.00
HFC-143a	0.01	0.01	0.01	0.01	100.00
HFC-227ea	0.00	0.00	0.00	0.00	100.00
HFC-236fa	NA, NO	NA, NO	NA, NO	NA, NO	0.00
HFC-245ca	NA, NO	NA, NO	NA, NO	NA, NO	0.00
Unspecified mix of listed HFCs(4) - (Gg CO ₂ equivalent)	NA, NO	NA, NO	NA, NO	NA, NO	0.00
Emissions of PFCsc - (kt CO₂ eq)	0.00	0.01	0.04	0.05	100.00
CF ₄	NA, NO	NA, NO	NA, NO	NA, NO	0.00
C ₂ F ₆	NA, NO	NA, NO	NA, NO	NA, NO	0.00
C 3F8	0.00	0.00	0.00	0.00	100.00
C ₄ F ₁₀	NA, NO	NA, NO	NA, NO	NA, NO	0.00
c-C ₄ F ₈	NA, NO	NA, NO	NA, NO	NA, NO	0.00
C ₃ F ₁₂	NA, NO	NA, NO	NA, NO	NA, NO	0.00
C ₆ F ₁₄	NA, NO	NA, NO	NA, NO	NA, NO	0.00
Unspecified mix of listed PFCs(4) - (Gg CO ₂ equivalent)	NA, NO	NA, NO	NA, NO	NA, NO	0.00
Emissions of SF₆(3) - (Gg CO₂ equivalent)	9.60	9.97	13.07	14.87	329.96
SF ₆	0.00	0.00	0.00	0.00	329.96

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

^a 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.

^cEnter 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 CO₂ equivalent emissions.

^dIn 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 CO₂ equivalent and that appropriate notation keys should be entered in the cells for the individual chemicals.)

Table 2(a)

BGR_BR1_v3.0

Description of quantified economy-wide emission reduction target: base year^a

<i>Party</i>	<i>Bulgaria</i>	
Base year /base period	1988	
Emission reduction target	% of base year/base period	% of 1990 ^b
	20.00	NE
Period for reaching target	BY-2020	

^a 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.

^b Optional.

Description of quantified economy-wide emission reduction target: gases and sectors covered^a

<i>Gases covered</i>		<i>Base year for each gas (year):</i>
CO ₂		1988
CH ₄		1988
N ₂ O		1988
HFCs		1995
PFCs		1995
SF ₆		1995
NF ₃		to be decided
Other Gases (specify)		
Sectors covered ^b	Energy	Yes
	Transport ^f	Yes
	Industrial processes ^g	Yes
	Agriculture	Yes
	LULUCF	Yes
	Waste	Yes
	Other Sectors (specify)	

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

^a Reporting by a developed country Party on the information specified in the common tabular format does not 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.

^b More than one selection will be allowed. If Parties use sectors other than those indicated above, the explanation of how these sectors relate to the sectors defined by the IPCC should be provided.

^f Transport is reported as a subsector of the energy sector.

^g Industrial processes refer to the industrial processes and solvent and other product use sectors.

Description of quantified economy-wide emission reduction target: global warming potential values (GWP)^a

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

Abbreviations : GWP = global warming potential

^a Reporting by a developed country Party on the information specified in the common tabular format does not 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.

^b Please specify the reference for the GWP: Second Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) or the Fourth Assessment Report of the IPCC.

Description of quantified economy-wide emission reduction target: approach to counting emissions and removals from the LULUCF sector^a

Role of LULUCF	LULUCF in base year level and target	Excluded
	Contribution of LULUCF is calculated using	

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

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

Description of quantified economy-wide emission reduction target: market-based mechanisms under the Convention^a

<i>Market-based mechanisms under the Convention</i>	<i>Possible scale of contributions (estimated kt CO₂ eq)</i>
CERs	NE
ERUs	NE
AAUs ⁱ	NE
Carry-over units ^j	NE
Other mechanism units under the Convention (specify) ^d	

Abbreviations : AAU = assigned amount unit, CER = certified emission reduction, ERU = emission reduction unit.

^a Reporting by a developed country Party on the information specified in the common tabular format does not 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.

^d As indicated in paragraph 5(e) of the guidelines contained in annex I of decision 2/CP.17 .

ⁱ AAUs issued to or purchased by a Party.

^j Units carried over from the first to the second commitment periods of the Kyoto Protocol, as described in decision 13/CMP.1 and consistent with decision 1/CMP.8.

Description of quantified economy-wide emission reduction target: other market-based mechanisms^a

<i>Other market-based mechanisms</i>	<i>Possible scale of contributions</i>
<i>(Specify)</i>	<i>(estimated kt CO₂ eq)</i>

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

Description of quantified economy-wide emission reduction target: any other information^{a,b}

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^a 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.

^b This information could include information on the domestic legal status of the target or the total assigned amount of emission units for the period for reaching a target. Some of this information is presented in the narrative part of the biennial report.

Table 3

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

Name of mitigation action ^a	Sector(s) affected ^b	GHG(s) affected	Objective and/or activity affected	Type of instrument ^c	Status of implementation ^d	Brief description ^e	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO ₂ eq)	
Improvement of production efficiency in existing coal-fired power plants	Energy	CO ₂	increase the efficiency of production of the power plants	Other (Research)	Adopted	Measures to increase the efficiency of production in a cost effective way can lead to reduction of this factor by approximately 5% - 7% which is equal to 1.3 mln. tonnes annual reduction of carbon dioxide emissions from existing coal-fired power plants by 2020	2013	MEE		585.00
Fuel substitution – from coal to natural gas	Energy	CO ₂	Substitution of coal in the energy sector with natural gas	Economic	Adopted	The EU ETS and the competition on the electricity market encourage the transition to low-carbon technologies and fuels such as natural gas.	2013	MEE		1.46
Increasing of high efficiency combined production	Energy	CO ₂	Support of the increase of efficient cogeneration of heat and electricity.	Economic Fiscal Regulatory	Adopted	The co-generation of heat and electric energy improves the overall efficiency of fuel use and saves the primary energy needed to produce the two types of energy separately	2013	MEE		200.00
Increasing the share of heating and cooling based on renewable energy sources	Energy	CO ₂	Reduction of greenhouse gas emissions	Regulatory	Adopted	Bulgaria has a significant potential of renewable energy sources and the encouragement of investments therein directly contributes to diversification of the energy mix and to slowing down the process of exhaustion of local energy resources. An important aspect here is the decentralized production of energy and the consumption of energy from renewable sources by households.	2013	MEE		NE
Implementation of the measures in the programme for accelerated gasification (PAG) in Bulgaria	Energy	CO ₂	Reduction of end-use energy intensity of households	Other (Fiscal)	Adopted	The use of natural gas instead of electricity for heating and domestic purposes can save about 100kWh/year at least, and up to 1800 kWh/year per household.	2013			309.50

Table 3

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

<i>Name of mitigation action^a</i>	<i>Sector(s) affected^b</i>	<i>GHG(s) affected</i>	<i>Objective and/or activity affected</i>	<i>Type of instrument^c</i>	<i>Status of implementation^d</i>	<i>Brief description^e</i>	<i>Start year of implementation</i>	<i>Implementing entity or entities</i>	<i>Estimate of mitigation impact (not cumulative, in kt CO₂ eq)</i>	
After the entry into force of the new directive on energy efficiency - restoration of the specified annual percentage of the overall public and government buildings (with total area over 250m ²)	Energy	CO ₂	Improving the energy efficiency in municipal dwellings	Other (Economic)	Adopted	The measure will come into effect after adoption of the new Energy Efficiency Directive (EED) expected by the end of 2012. At this stage of negotiations within the EU legislative bodies the percentage of buildings that are to be retrofitted per year laid down in the draft directive is 3%, which is acceptable for our country according to the Bulgarian position on the proposal. State-owned and municipal dwellings ⁶⁸ account for 3,1% of the total number of buildings in the country according to data from the National Statistical Institute. 64% of them are two-room and three-room dwellings, while another 22,9% have four or more rooms (we assume that they fall into this group). Assuming 3% annual sanitation means that 4562 buildings are to be retrofitted by 2020	2015	MEE		25.50

Table 3

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

Name of mitigation action ^a	Sector(s) affected ^b	GHG(s) affected	Objective and/or activity affected	Type of instrument ^c	Status of implementation ^d	Brief description ^e	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO ₂ eq)	
Introduction of mandatory energy efficiency scheme (reduction of the consumption of fuel and energy in the energy end-use consumption)	Energy	CO ₂	This measure is proactive and is consistent with the announced direction and actions of the EC aiming at reducing fuel and energy consumption.	Regulatory	Planned	Precondition for achieving the estimated effect are the regulatory changes with the view of introducing a requirement for specific (proportional) annual reduction of the amount of energy provided on the market by distribution companies and traders in energy (end-use consumption). Market mechanisms and incentives to reduce fuel and energy consumption need to be established along with mandatory schemes and market of energy services (market of "white" certificates/certificates of energy savings).The measure is consistent with the new policy proposed by the EC to improve the energy efficiency in end-use consumption by saving annually fuel and energy equivalent to 1.5% of the energy provided by distribution companies and traders in energy on the market for the previous year (excluding energy in transport). The annual energy savings, respectively obligations, will be constant value (expressed in percentage) until 2020. To introduce such a scheme it is necessary to undertake appropriate legislative changes and to prepare its structure and operation. The responsible persons will be determined in the course of development of the scheme.	2014	MEE		17.50

Table 3

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

Name of mitigation action ^a	Sector(s) affected ^b	GHG(s) affected	Objective and/or activity affected	Type of instrument ^c	Status of implementation ^d	Brief description ^e	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO ₂ eq)	
Replacement of the obsolete and inefficient equipment for production of energy with new equipment	Energy	CO ₂	The measure applies to the end-use consumption of fuels, their conversion into energy for heating, cooling and domestic hot water and to energy consumption.	Other (Regulatory)	Planned	Introducing mechanisms - financial and administrative - to replace old inefficient equipment for energy production with new one. Development of standards and requirements to primary energy transformation facilities. The process should be linked to the activities for control and inspection of heating and air conditioning installations. The financial incentives should combine existing schemes with mandatory co-financing by the beneficiary. The measure is linked also to the activities provided in SNAPEE in accordance with the Regulation adopted pursuant to Art. 15 of Directive 2009/125/EC establishing a framework for the setting of ecodesign requirements for energy-related products . The measure applies to the end-use consumption of fuels, their conversion into energy for heating, cooling and domestic hot water and to energy consumption	2014	MEE		9.00
Development and staged implementation of national programme "1000 sunny roofs"	Energy	CO ₂	Commissioning of a bivalent system for preparation of hot water for domestic needs - evacuated tube solar collectors and heat pump units (air) for 1000 multi-family buildings (46 apartments, households with 3 members).	Regulatory	Planned	Commissioning of a bivalent system for preparation of hot water for domestic needs - evacuated tube solar collectors and heat pump units (air) for 1000 multi-family buildings (46 apartments, households with 3 members). The effect was evaluated on the basis of electricity, taking into account the consumption of the heat pump units. This program is not laid down in a national strategic document, however it is in line with the national RES policy and encourages the production of heat from RES.	2015	MEE		17.00

Table 3

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

Name of mitigation action ^a	Sector(s) affected ^b	GHG(s) affected	Objective and/or activity affected	Type of instrument ^c	Status of implementation ^d	Brief description ^e	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO ₂ eq)	
Energy efficiency Audits and implementation of the prescribed measures	Energy	CO ₂ , HFCs, PFCs	Industrial systems with annual energy consumption over 3 000 MWh are required to have their energy efficiency audited every three years.		Implemented	The prescribed measures are mandatory. Energy Efficiency for Competitive Industry is a new programme that provides low-interest loans to small and medium-sized enterprises. The total amount of funds under the programme is €300 mln.. €150 million of this amount will be provided by Operational Program Competitiveness and the remaining amount - from EBRD credit lines through the Bulgarian commercial banks.	2008	MEE		119.00
Use of biomass in the combustion units of installations	Energy	CO ₂ , CH ₄ , N ₂ O	The aim is to decrease the use of fossil fuel use and increase share of the alternative fuel and wastes. Reduction of heat price. Improved waste management and reduced GHG emissions from waste sector.	Regulatory Economic Fiscal Information	Adopted	This measure has an direct impact on reduction of GHG emissions due to replacement of part of fossil fuels with an alternative fuel such as: separately collected household waste (RDF); sludge from domestic sewage water; agricultural waste and waste from the food industry; industrial waste mixed with biomass. It is related to the ban on landfilling of biodegradable waste. The procedure for a green industry is intended to attain more efficient use of waste products. It is proposed to finance in the next programming period facilities that enable the utilization of sludge from urban wastewater treatment plants in industrial installations.	2013	MEE, MOEW		647.00
Construction of installations for mechanical and biological treatment (mbt) and installations for treatment and recovery of compost and biogas	Waste management/waste	CH ₄	Gradual reduction of biodegradable waste intended for landfilling 2010-2020.	Economic	Adopted	As a result of its implementation for the period 2013-2020 5 289 000 tonnes of biodegradable waste will be diverted from landfills. An additional impact of the measure will be the substitution of phosphate fertilizers in agriculture with compost produced at waste treatment installations.	2013	MOEW		728.00

Table 3

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

Name of mitigation action ^a	Sector(s) affected ^b	GHG(s) affected	Objective and/or activity affected	Type of instrument ^c	Status of implementation ^d	Brief description ^e	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO ₂ eq)	
Capture and burning of biogas in all new and in the existing regional landfills	Waste management/waste	CH ₄	360 mln. Nm ³ methane will be burned by 2020 with the introduction of systems for capture and flaring of biogas in all regional landfills.	Economic	Adopted	The requirement for design and operation of landfills is provided for in Ordinance №8/2004. It is necessary to improve the control over its implementation. 360 mln. Nm ³ methane will be burned by 2020 with the introduction of systems for capture and flaring of biogas in all regional landfills.	2013	MOEW		634.00
Introduction of anaerobic stabilization of sludge with management capture and burning of biogas in new plants and plants under reconstruction in settlements with population equivalent over 20 thousand residents	Waste management/waste	CH ₄ , N ₂ O	A cost-benefit analysis for each project should justify or discourage the recovery of methane.	Other (Economic)	Planned	A cost-benefit analysis for each project should justify or discourage the recovery of methane. Practice has shown that it is technologically feasible and economically viable to produce electricity from the biogas emitted from the methane tanks of large wastewater treatment plants (more than 50 000 PE) in order to cover the main share of the energy needs of the plants. An additional effect of the stabilization of sludge at UWWTP will be achieved as a result of the possibility to use the stabilized sludge in agriculture so as to recycle the nutritional substances, to preserve the fertile soils and to limit the use of agricultural chemicals and synthetic fertilizers.	2013	MOEW		128.00

Table 3

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

Name of mitigation action ^a	Sector(s) affected ^b	GHG(s) affected	Objective and/or activity affected	Type of instrument ^c	Status of implementation ^d	Brief description ^e	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO ₂ eq)	
Encouraging the use of suitable crop rotation, especially with crops fixing atmospheric nitrogen	Agriculture	CH ₄	The introduction of sustainable crop rotations that include plant cover in winter and legumes (beans, soybeans, alfalfa, clover) will prevent soil erosion and will retain organic carbon (carbon sequestration), which is a potential tool for reducing greenhouse gases.	Economic	Adopted	"Rotation means science-based successive rotation of crops in time and place on a farmland. The period required for all crops to pass through all fields following the order of the crop rotation scheme is called rotation period or rotation. The introduction of sustainable crop rotations that include plant cover in winter and legumes (beans, soybeans, alfalfa, clover) will prevent soil erosion and will retain organic carbon (carbon sequestration), which is a potential tool for reducing greenhouse gases. The proposed budget for the measure is based on: 350 BGN/ha is the current payment for biological field crops under Measure 214 of RDP 2007-2013; 150 BGN/ha is the current payment for the introduction of rotation under Measure 214 of RDP 2007-2013. This measure covers: 20 000 ha, of which 60% in organic production. Organic production: 12 000 ha X 350 BGN/ha = 4 200 000 BGN Crop rotation: 8000 ha x 150 BGN/ha = 1 200 000 BGN"	2013	MAF		1.00

Table 3

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

Name of mitigation action ^a	Sector(s) affected ^b	GHG(s) affected	Objective and/or activity affected	Type of instrument ^c	Status of implementation ^d	Brief description ^e	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO ₂ eq)	
Management of degraded agricultural land using: Biological reclamation with grass species typical of the region. Management of degraded agricultural land using: Implementation of erosion control measures and soil treatment methods	Agriculture	CH ₄	Management of degraded agricultural land	Other (Economic)	Planned	Soil erosion is a process of mechanical destruction and weathering of soil by the action of water and wind. It gradually reduces the amount of nutrients and the humus in soil. Erosion aggravates the structure, as well as the water and air regime of soil. The combination of the specific natural and economic conditions in Bulgaria is a reason for the high risk of degradation processes in agricultural soils. The most common processes of soil degradation include water and wind erosion, pollution, reduction of organic matter stocks (humus), compaction, acidification, salinisation, loss of biodiversity. More than 60% of the country is affected by varying degrees of erosion. 11.8 % of the country's territory is severely eroded. 65% of agricultural land is threatened by water erosion and 24% is threatened by wind erosion. The average annual intensity of soil erosion varies according to land use, but soil loss in agricultural lands is estimated at 12.256 tonnes/ha a year on average. The water erosion of soil controls the stocks of organic carbon and their distribution on the landscape which affects the circulation of carbon, the content of carbon dioxide in the atmosphere and the global warming.	2014	MAF		3.00
Improvement of the manure use and management	Agriculture	CH ₄	All activities aimed at storage and handling of manure should take into account both the type of manure - solid or liquid - and the technologies for gathering and processing.	Research Education Economic	Planned	" The investment support is crucial to motivate the farmers to build such expensive facilities. The proposed budget for the measure is based on: The average cost of building facilities for storage of manure for one farm with 50 cows is 130 000 BGN. 1000 x 130 000 BGN = 130 000 000 BGN For training: 300 livestock holdings x 690 BGN = 207 000 BGN"	2014	MAF		0.15

Table 3

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

Name of mitigation action ^a	Sector(s) affected ^b	GHG(s) affected	Objective and/or activity affected	Type of instrument ^c	Status of implementation ^d	Brief description ^e	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO ₂ eq)	
Technical support for farmers for tilling soil/stubbles	Agriculture	CH ₄	The efficient recovery of waste will reduce the need for burning stubble. Emission reduction	Fiscal	Planned	The use of plant residues in agriculture requires both a change or adjustment of the production processes as well as investment in new equipment and machinery.	2014	MAF		0.09
Design and construction of new road infrastructure and rehabilitation and modernization of the existing road infrastructure to ensure optimum speed and optimum driving modes of automobile engines	Transport	CO ₂	Assessment of the emission saving potential of projects for rehabilitation and modernization – within the EIA.	Fiscal	Planned	"Assessment of the emission saving potential of projects for rehabilitation and modernization – within the EIA. Existing methodology of the European Investment Bank. (http://www.eib.org/attachments/strategies/footprint_summary_of_the_methodologies_en.pdf)"	2014	MTITC		542.00
Introduction of intelligent transport systems along the national and the urban road network	Transport	CO ₂ , CH ₄ , N ₂ O	Intelligent transport systems and telematic solutions help improve road safety, promote the efficiency of the used existing infrastructure and contribute to the reduction of environmental pollution through control over traffic flows and management of traffic volume.		Planned	"Intelligent Transport Systems (ITS) encompass a wide range of technical solutions designed to improve transport by improving mobility and increasing the safety of road traffic. Telematics (a combination of telecommunications and informatics) uses advanced technologies to meet transport needs. Intelligent transport systems and telematic solutions help improve road safety, promote the efficiency of the used existing infrastructure and contribute to the reduction of environmental pollution through control over traffic flows and management of traffic volume. The intelligent transport systems in urban settings can include integrated management of public transport charges, enhanced management of customer relationships, traffic forecasts, improved traffic management, traveler information and toll collection. These systems apply advanced technologies to collect more and better data, to make a precise analysis of these data and to link them through more effective networks."	2014	MTITC		1,017.00

Table 3

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

Name of mitigation action ^a	Sector(s) affected ^b	GHG(s) affected	Objective and/or activity affected	Type of instrument ^c	Status of implementation ^d	Brief description ^e	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO ₂ eq)	
Increasing the share of biofuels	Transport	CO ₂ , CH ₄ , N ₂ O	The most promising projects in Bulgaria are the projects for production of ethanol and biodiesel.	Regulatory	Adopted	Biofuels are fuels produced from biomass and used in transport. They diversify the energy mix and reduce the dependence on fossil fuels. The main types of biofuels are bioethanol, biodiesel, biogas, synthetic biofuels, bio-hydrogen, pure vegetable oils. The most promising projects in Bulgaria are the projects for production of ethanol and biodiesel. The Renewable Energy Sources Act (Art. 47(1)) introduces stages for the introduction of certain percentages of biodiesel and bioethanol content in the relevant fuel, as well as requirements to the types of biofuels and sustainability criteria which they must meet.	2013	MEE		407.00
Reducing the share of trips by private motor vehicles	Transport	CO ₂ , CH ₄ , N ₂ O	Improving the urban public transport and non-motorized transport development	Other (Other (planning))	Implemented	Reducing the share of trips by private motor vehicles by improving the urban public transport and non-motorized transport development. Project-oriented approach – specific implementation	2012	MRDPW		678.00

Table 3

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

Name of mitigation action ^a	Sector(s) affected ^b	GHG(s) affected	Objective and/or activity affected	Type of instrument ^c	Status of implementation ^d	Brief description ^e	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO ₂ eq)	
Increasing the share of public electrical transport - railways, trolley, tram, metro	Transport	CO ₂ , CH ₄ , N ₂ O	Increasing the share of public electrical transport 1. Increasing the share of electric railway transport - infrastructure improvements; 2. Increasing the share of electric railway transport - renovation of vehicles; 3. Increasing the share of electric mass public transport - infrastructure improvements; 4. Increasing the share of electric mass public transport - renovation of vehicles.	Other (Fiscal)	Planned	modernization of the railway line Sofia – Plovdiv; reconstruction and electrification of railway line Svilengrad - Turkish border; renewal of sections of railway infrastructure on the railway line Plovdiv - Burgas (along Trans-European Transport Network); modernization of railway line Sofia - Dragoman (along TEN-T); design of the construction of railway line Vidin - Sofia. Given the crucial importance of the central section of Line 2, it is currently a separate Sofia Metro Expansion Project which is included in Operational Programme Transport, with financing by the European Regional Development Fund, with national and local co-financing. This stretch covers the section: “Road junction Nadezhda - Central Railway Station – Sv. Nedelya Square - Cherny Vrah Blvd.”	2014	MTITC		142.00
Development and promotion of cycling	Transport	CO ₂ , CH ₄ , N ₂ O	Promotion of cycling	Economic Education Information	Adopted	1. Design and construction of new cycling infrastructure 2. Developing systems for use of municipal bicycles trainings and campaigns	2013			127.00

Table 3

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

Name of mitigation action ^a	Sector(s) affected ^b	GHG(s) affected	Objective and/or activity affected	Type of instrument ^c	Status of implementation ^d	Brief description ^e	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO ₂ eq)	
Development and construction of intermodal terminals for combined transport	Transport	CO ₂ , CH ₄ , N ₂ O	Increase of the degree of utilization of more environmentally friendly modes of transport and creation of favorable conditions for increasing the added value of transport activity with overall reduction of transport costs per unit of GDP	Other (Other (planning))	Planned	The measure aims to achieve a two-sided effect, consisting, on one side, in increase of the degree of utilization of more environmentally friendly modes of transport and, on the other side, in the creation of favorable conditions for increasing the added value of transport activity with overall reduction of transport costs per unit of GDP. The expected results of its implementation are: • more efficient use of rail and water transport; • development of transport schemes and technologies meeting contemporary requirements with regard to environment and climate; • increased coordination and integration of different transport modes; • lower cost for passenger and cargo transport; • integration of the Bulgarian transport system with that of the EU and increasing its competitiveness.	2014	MTITC		58.12
Utilization of "non-wooded areas intended for afforestation" in forest areas	Agriculture, Forestry/LULUC F	CO ₂	Increasing forest area has an important role in offsetting the greenhouse gas emissions from other sectors. The afforestation of non-wooded areas in the long term will increase the capacity of the forests as sinks of greenhouse gases.	Economic	Planned	The measure is consistent with the requirements set out in the Forestry Act of Bulgaria (2011). The needed financial resources are estimated on the basis of the accepted mean values of investments. The implementation of the measure is important for achieving the goals of NAPCC because forests are a major carbon sink and a reservoir of 90-95% of the total amount of sequestered carbon in the LULUCF sector. Increasing forest area has an important role in offsetting the greenhouse gas emissions from other sectors. The afforestation of non-wooded areas in the long term will increase the capacity of the forests as sinks of greenhouse gases.	2013	MAF		1.67

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

Name of mitigation action ^a	Sector(s) affected ^b	GHG(s) affected	Objective and/or activity affected	Type of instrument ^c	Status of implementation ^d	Brief description ^e	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO ₂ eq)	
Afforestation of abandoned agricultural land, barren and deforested areas, eroded and threatened by erosion land outside forest areas	Agriculture, Forestry/LULUC F	CO ₂	The implementation of the measure will increase the absorption of greenhouse gases and thus contribute to climate change mitigation, to the protection of biodiversity and of the soil against erosion.	Economic	Planned	The proposed measure corresponds to those with codes 223 and 226 under the Rural Development Programme. It is possible to apply under this programme with projects and to obtain appropriate funding. The needed financial resources are estimated on the basis of accepted mean values of investments. There is a potential for creating new forests outside the forested areas especially over the last two decades, when large territories of the agricultural land is not cultivated. The implementation of the measure will increase the absorption of greenhouse gases and thus contribute to climate change mitigation, to the protection of biodiversity and of the soil against erosion. To achieve the objective of the measure it is necessary, before undertaking afforestation activities, to make an inventory of the areas that are suitable for afforestation and to conduct applied scientific studies to evaluate their suitability and possibility for afforestation; appropriate recommendations for suitable species should be provided on the basis of the conditions of the places where they grow.	2013	MAF, MRDPW		4.39

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

Name of mitigation action ^a	Sector(s) affected ^b	GHG(s) affected	Objective and/or activity affected	Type of instrument ^c	Status of implementation ^d	Brief description ^e	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO ₂ eq)	
Increase of areas for urban and suburban parks and green zones	Agriculture	CO ₂	Increasing the areas of urban and suburban parks and green zones and keeping them in good condition will contribute to increased absorption of greenhouse gases and to better quality of the living environment.	Economic	Planned	The proposed measure corresponds in part to measure with code 322 from the Rural Development Programme that provides funding opportunities. The measure is also related to Ordinance № 5 on Spatial Planning Rules and Standards, setting standards for the surface area of public green areas in cities. The needed financial resources are estimated on the basis of the accepted mean values of investments. The expansion of urban areas and the intensive building in recent years is a prerequisite for significant emissions of greenhouse gases. Increasing the areas of urban and suburban parks and green zones and keeping them in good condition will contribute to increased absorption of greenhouse gases and to better quality of the living environment. The measure will contribute also to the gradual achievement of the standards for green areas laid down in the General Development Plans.	2013	MRDPW		0.31
Restoration and sustainable management of wetlands. Protection and preservation of wetlands in forest areas, peatlands, marshlands	Agriculture, Forestry/LULUC F	CO ₂	The restoration and the conservation of wetlands and woodlands and their proper management will enhance their efficiency as carbon stores.	Economic	Planned	"The main instrument for the protection of wetlands is the Convention on Wetlands which is transposed in the Biological Diversity Act. The wetlands are designated as protected areas with priority or are included in Natura 2000. They will be subject to management plans that are currently being developed and that will be supplemented by special programmes for management in view of climate change. The needed financial resources are estimated on the basis of the accepted mean values of investments. Wetlands are characterized by great biological diversity and play an important role in carbon retention because they are among the most productive ecosystems. The restoration and the conservation of wetlands and woodlands and their proper management will enhance their efficiency as carbon stores."	2013	MAF, EAF		0.59

Table 3

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

Name of mitigation action ^a	Sector(s) affected ^b	GHG(s) affected	Objective and/or activity affected	Type of instrument ^c	Status of implementation ^d	Brief description ^e	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO ₂ eq)	
Restoration and maintenance of protective forest belts and new anti-erosion afforestation	Agriculture, Forestry/LULUC F	CO ₂	Besides the direct effect for absorption of carbon by the new forests in these zones, there are also significant indirect effects associated with preventing wind erosion after the restoration of belts.	Economic	Planned	The first step is to update the programme for restoration of shelter belts and the specific activities will commence after its approval. Besides the direct effect for absorption of carbon by the new forests in these zones, there are also significant indirect effects associated with preventing wind erosion after the restoration of belts. The information on the areas and the funds necessary for the restoration is provided by EFA.	2013	MAF, EAF		1.05
Increasing the density in the listed natural and artificial plantations	Agriculture, Forestry/LULUC F	CO ₂	Increasing the density in the listed plantations by supporting their natural regeneration or using other methods.	Economic	Planned	A first step can be the assignment of scientific studies followed by amendments to the regulations. Activities will commence on this basis with the view of increasing the density in the listed plantations by supporting their natural regeneration or using other methods. The information on the areas and the necessary funding is provided by EFA.	2013	MAF, EAF		2.09
Improvement of the operation of nuclear power plant Kozloduy (NPP-K)	Energy	CO ₂	Improvement of the existing plants	Economic	Implemented	improved operation of Units 5 and 6 at Kozloduy NPP through the following measures:• conducted rehabilitation, reduction of losses from transmission of thermal energy and replacement of the subscriber stations;• introduction of the thermal energy accounting system that allows for regulation and reporting of the actually consumed thermal energy.	2007			1,000.00

Table 3

BGR_BR1_v3.0

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

Name of mitigation action ^a	Sector(s) affected ^b	GHG(s) affected	Objective and/or activity affected	Type of instrument ^c	Status of implementation ^d	Brief description ^e	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO ₂ eq)	
Accelerated development of hydro energy (JI)	Energy	CO ₂	Construction of hydro cascade Gorna Arda and Sredna Vucha (expected start in 2012)	Economic	Implemented	"The main instrument for the protection of wetlands is the Convention on Wetlands which is transposed in the Biological Diversity Act. The wetlands are designated as protected areas with priority or are included in Natura 2000. They will be subject to management plans that are currently being developed and that will be supplemented by special programmes for management in view of climate change. The needed financial resources are estimated on the basis of the accepted mean values of investments. Wetlands are characterized by great biological diversity and play an important role in carbon retention because they are among the most productive ecosystems. The restoration and the conservation of wetlands and woodlands and their proper management will enhance their efficiency as carbon stores."	2007	MOEW, MIE		200.00
Small and micro HPP (JI)	Energy	CO ₂	Construction of small and micro HPP in different country regions	Economic	Implemented	Hydropower stations with capacity up to 10 MW are classified as small or micro HPPs. The potential for electricity production from MHPPs is thoroughly studied and is assessed at 0.7 TWh per year. High investments costs and the low annual utilization of the installed capacity (app. 2,400 hours per year) impede the installation of new capacities.	2007	MOEW, MIE		NE
Upgrading of cogeneration plants and district heating boilers (JI, ETS)	Energy	CO ₂	Upgrading of cogeneration plants and district heating boilers by natural gas turbines	Economic	Implemented	The introduction of new natural-gas combined cycle for replacing capacities at some of the existing thermal power plants and district heating plants forms part of the Implementation Programme for the Directive on Large combustion plants for the period after 2007.	2007	MOEW, MIE		867.00

Table 3

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

Name of mitigation action ^a	Sector(s) affected ^b	GHG(s) affected	Objective and/or activity affected	Type of instrument ^c	Status of implementation ^d	Brief description ^e	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO ₂ eq)	
Electricity transmission and distribution losses	Energy	CO ₂	Decreasing of losses in the distribution and transmission networks	Other (Regulatory)	Implemented	A reduction of the electricity losses will lead to fewer GHG emissions as a result of lower electricity production in coal-fired plants. According to experts assessment these are about 20-30 % of the losses in transmission networks and 30-40 % of the losses in distribution networks.	2007	MIE		1,000.00
Heat transmission and distribution losses	Energy	CO ₂	Decreasing of losses in the heat transmission networks	Other (Regulatory)	Implemented	Losses of heat can be reduced through rehabilitation, modernisation and improving the exploitation of the transmission and distribution networks. A reduction of the heat losses will lead to fewer GHG emissions as a result of lower heat production in heat boilers.	2007	MIE		900.00
Biomass for electricity and heat production (JI + Green Investment scheme)	Energy	CO ₂	Increase of share of RES in electricity and heat production	Other (Voluntary Agreement)	Implemented	Support for introduction of biomass for heat and electricity production and diversification of energy supply	2007	MOEW, MIE		600.00
Reduction of thermal losses in industry	Energy	CH ₄	Reduction of thermal losses in industry by improvement of the operation	Other (Voluntary Agreement)	Implemented	Conducted rehabilitation, reduction of losses from transmission of thermal energy and replacement of the subscriber stations;• introduction of the thermal energy accounting system with possibility for regulation and reporting of the actually consumed thermal energy;	2009			140.00
Natural gas supply to the industry by development of gas infrastructure	Energy	CO ₂	Increased use of natural gas in industry by new gas infrastructure	Economic	Implemented	Reducing the consumption of electricity by substituting it with natural gas will lead to more efficient use of resources, lower costs and better and healthier environment.	2007	MIE		90.00
Introduction of monitoring systems for energy consumption	Energy	CO ₂	Control of energy consuming systems in industry	Regulatory	Implemented	These measures are aimed at improving the energy efficiency and at optimal utilization of resources and thus creating preconditions for increase in production competitiveness by reducing the energy intensity and the final energy consumption.	2007			120.00

Table 3

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

Name of mitigation action ^a	Sector(s) affected ^b	GHG(s) affected	Objective and/or activity affected	Type of instrument ^c	Status of implementation ^d	Brief description ^e	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO ₂ eq)	
Gas supply to households	Energy	CO ₂	Reduced final consumption /minimum/ of households as a result of gasification	Economic Fiscal Regulatory	Implemented	The Energy Strategy of Bulgaria envisages creation of conditions for access to the gas distribution system to 30% of households in 2020 and substitution of electricity used for heating purposes which would save households more than 1 bln. BGN of energy costs. The use of natural gas instead of electricity for heating and domestic purposes can save about 100kWh/year at least, and up to 1800 kWh/year per household.	2007			2,500.00
Solar collectors	Energy	CO ₂	Installation of solar collectors - DEVELOPMENT AND PHASED IMPLEMENTATION OF NATIONAL PROGRAMME "1000 SUNNY ROOFS"	Other (Voluntary Agreement)	Implemented	Commissioning of a bivalent system for preparation of hot water for domestic needs - evacuated tube solar collectors and heat pump units (air) for 1000 multi-family buildings (46 apartments, households with 3 members). The effect was evaluated on the basis of electricity, taking into account the consumption of the heat pump units. This program is not laid down in a national strategic document, however it is in line with the national RES policy and encourages the production of heat from RES.	2007			20.00

Table 3

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

Name of mitigation action ^a	Sector(s) affected ^b	GHG(s) affected	Objective and/or activity affected	Type of instrument ^c	Status of implementation ^d	Brief description ^e	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO ₂ eq)	
Adoption of the best management practices for handling and using manure on the whole cycle including processes of capture, storage, treatment and utilisation of animal manures.	Agriculture	CH ₄	reduction of CH ₄ emissions by utilization of manures wastes in cogeneration and other uses as fertilization.	Other (Regulatory)	Implemented	"Manure is one of the most considerable methane sources in agriculture. Therefore all the activities related to manure storage and treatment should take into account the manure type – liquid or solid as well as the technologies for collection and treatment. The modern manure management practices, not applied in Bulgaria, include: engineering of standardized construction elements for manure disposal facilities, introduction of bulldozer cleaning and transportation of the dry manure in containers and others. In liquid manure management are used transportation tanks, underground disposal at cattlebreeding farms and poultry-farming sites, separation of manure into liquid and solid fraction at pig-breeding farms, etc."	2007			70.00
"Improving fertilization practices Elaboration of irrigation technologies aiming at water use reduction"	Agriculture	N ₂ O	Implementation of good agricultural practices including improvement of fertilization and better irrigation technologies	Economic Regulatory Research Education	Implemented	During the last years fertilization was conducted in an uncontrolled manner. The amounts of nitrous fertilizers applied to soils often exceeded the recommended ones. The requirements for quality of production and lower prime costs grew strict due to expanded import of agricultural goods from the neighbouring countries. These products compete successfully with some local productions both for their quality and price. The appropriate fertilization and irrigation are preconditions for competitiveness of local agricultural production and reduction of N ₂ O emissions.	2007			170.00

Table 3

BGR_BR1_v3.0

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

Name of mitigation action ^a	Sector(s) affected ^b	GHG(s) affected	Objective and/or activity affected	Type of instrument ^c	Status of implementation ^d	Brief description ^e	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO ₂ eq)	
Utilization of the captured methane for production of electricity	Waste management/waste	CH ₄	Utilization of captured methane for production of electricity	Other (Regulatory)	Implemented	"The electricity generation from landfill methane is subject to special treatment by the National Electricity Grid. According the Energy Law the Grid operator should purchase all the renewable electricity at preferential prices. As far as methane from the landfills is considered as renewable energy source the selling of electricity is ensured. The captured methane can be utilized in piston gas motors where electricity is generated. The received electrical energy from the burning of one ton captured methane is expected to be about 4.2 MWh under the assumption that the diesel-generators operate 6 000 hours per year. This utilization of equipment for electricity production means an installed capacity of 19.517 kW."	2007			90.00

Note : The two final columns specify the year identified by the Party for estimating impacts (based on the status of the measure and whether an ex post or ex ante estimation is available).

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

^a Parties should use an asterisk (*) to indicate that a mitigation action is included in the 'with measures' projection.

^b To the extent possible, the following sectors should be used: energy, transport, industry/industrial processes, agriculture, forestry/LULUCF, waste management/waste, other sectors, cross-cutting, as appropriate.

^c To the extent possible, the following types of instrument should be used: economic, fiscal, voluntary agreement, regulatory, information, education, research, other.

^d To the extent possible, the following descriptive terms should be used to report on the status of implementation: implemented, adopted, planned.

^e Additional information may be provided on the cost of the mitigation actions and the relevant timescale.

^f Optional year or years deemed relevant by the Party.

Reporting on progress^{a, b}

<i>Year^c</i>	<i>Total emissions excluding LULUCF</i>	<i>Contribution from LULUCF^d</i>	<i>Quantity of units from market based mechanisms under the Convention</i>		<i>Quantity of units from other market based mechanisms</i>	
	<i>(kt CO₂ eq)</i>	<i>(kt CO₂ eq)</i>	<i>(number of units)</i>	<i>(kt CO₂ eq)</i>	<i>(number of units)</i>	<i>(kt CO₂ eq)</i>
(1988)						
2010						
2011						
2012						

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

^a Reporting by a developed country Party on the information specified in the common tabular format does not 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.

^b For the base year, information reported on the emission reduction target shall include the following: (a) total GHG emissions, excluding emissions and removals from the LULUCF sector; (b) emissions and/or removals from the LULUCF sector based on the accounting approach applied taking into consideration any relevant decisions of the Conference of the Parties and the activities and/or land that will be accounted for; (c) total GHG emissions, including emissions and removals from the LULUCF sector. For each reported year, information reported on progress made towards the emission reduction targets shall include, in addition to the information noted in paragraphs 9(a–c) of the UNFCCC biennial reporting guidelines for developed country Parties, information on the use of units from market-based mechanisms.

^c Parties may add additional rows for years other than those specified below.

^d Information in this column should be consistent with the information reported in table 4(a)I or 4(a)II, as appropriate. The Parties for which all relevant information on the LULUCF contribution is reported in table 1 of this common tabular format can refer to table 1.

Progress in achieving the quantified economy-wide emission reduction targets – further information on mitigation actions relevant to the contribution of the land use, land-use change and forestry sector in 2011^{a,b}

	<i>Net GHG emissions/removals from LULUCF categories^c</i>	<i>Base year/period or reference level value^d</i>	<i>Contribution from LULUCF for reported year</i>	<i>Cumulative contribution from LULUCF^e</i>	<i>Accounting approach^f</i>
	<i>(kt CO₂ eq)</i>				
Total LULUCF					Activity-based approach
A. Forest land					Activity-based approach
1. Forest land remaining forest land					Activity-based approach
2. Land converted to forest land					Activity-based approach
3. Other ^g					Activity-based approach
B. Cropland					Activity-based approach
1. Cropland remaining cropland					Activity-based approach
2. Land converted to cropland					Activity-based approach
3. Other ^g					Activity-based approach
C. Grassland					Activity-based approach
1. Grassland remaining grassland					Activity-based approach
2. Land converted to grassland					Activity-based approach
3. Other ^g					Activity-based approach
D. Wetlands					Activity-based approach
1. Wetland remaining wetland					Activity-based approach
2. Land converted to wetland					Activity-based approach
3. Other ^g					Activity-based approach
E. Settlements					Activity-based approach
1. Settlements remaining settlements					Activity-based approach
2. Land converted to settlements					Activity-based approach
3. Other ^g					Activity-based approach
F. Other land					Activity-based approach
1. Other land remaining other land					Activity-based approach
2. Land converted to other land					
3. Other ^g					
Harvested wood products					

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

^a Reporting by a developed country Party on the information specified in the common tabular format does not 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.

^b Parties that use the LULUCF approach that is based on table 1 do not need to complete this table, but should indicate the approach in table 2. Parties should fill in a separate table for each year, namely 2011 and 2012, where 2014 is the reporting year.

^c For each category, enter the net emissions or removals reported in the most recent inventory submission for the corresponding inventory year. If a category differs from that used for the reporting under the Convention or its Kyoto Protocol, explain in the biennial report how the value was derived.

^d Enter one reference level or base year/period value for each category. Explain in the biennial report how these values have been calculated.

^e If applicable to the accounting approach chosen. Explain in this biennial report to which years or period the cumulative contribution refers to.

^f Label each accounting approach and indicate where additional information is provided within this biennial report explaining how it was implemented, including all relevant accounting parameters (i.e. natural disturbances, caps).

^g Specify what was used for the category "other". Explain in this biennial report how each was defined and how it relates to the categories used for reporting under the Convention or its Kyoto Protocol.

Progress in achieving the quantified economy-wide emission reduction targets – further information on mitigation actions relevant to the contribution of the land use, land-use change and forestry sector in 2012^{a, b}

	<i>Net GHG emissions/removals from LULUCF categories^c</i>	<i>Base year/period or reference level value^d</i>	<i>Contribution from LULUCF for reported year</i>	<i>Cumulative contribution from LULUCF^e</i>	<i>Accounting approach^f</i>
	<i>(kt CO₂ eq)</i>				
Total LULUCF					
A. Forest land					
1. Forest land remaining forest land					
2. Land converted to forest land					
3. Other ^g					
B. Cropland					
1. Cropland remaining cropland					
2. Land converted to cropland					
3. Other ^g					
C. Grassland					
1. Grassland remaining grassland					
2. Land converted to grassland					
3. Other ^g					
D. Wetlands					
1. Wetland remaining wetland					
2. Land converted to wetland					
3. Other ^g					
E. Settlements					
1. Settlements remaining settlements					
2. Land converted to settlements					
3. Other ^g					
F. Other land					
1. Other land remaining other land					
2. Land converted to other land					
3. Other ^g					
Harvested wood products					

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

^a Reporting by a developed country Party on the information specified in the common tabular format does not 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.

^b Parties that use the LULUCF approach that is based on table 1 do not need to complete this table, but should indicate the approach in table 2. Parties should fill in a separate table for each year, namely 2011 and 2012, where 2014 is the reporting year.

^c For each category, enter the net emissions or removals reported in the most recent inventory submission for the corresponding inventory year. If a category differs from that used for the reporting under the Convention or its Kyoto Protocol, explain in the biennial report how the value was derived.

^d Enter one reference level or base year/period value for each category. Explain in the biennial report how these values have been calculated.

^e If applicable to the accounting approach chosen. Explain in this biennial report to which years or period the cumulative contribution refers to.

^f Label each accounting approach and indicate where additional information is provided within this biennial report explaining how it was implemented, including all relevant accounting parameters (i.e. natural disturbances, caps).

^g Specify what was used for the category "other". Explain in this biennial report how each was defined and how it relates to the categories used for reporting under the Convention or its Kyoto Protocol.

Table 4(a)II

BGR_BR1_v3.0
Source: BGR_CRF__ v3.1

Progress in achievement of the quantified economy-wide emission reduction targets – further information on mitigation actions relevant to the counting of emissions and removals from the land use, land-use change and forestry sector in relation to activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol^{a,b,c}

GREENHOUSE GAS SOURCE AND SINK ACTIVITIES	Base year ^d	Net emissions/removals ^e					Accounting parameters ^h	Accounting quantity ⁱ
		2008	2009	2010	2011	Total ^g		
		(kt CO ₂ eq)						
A. Article 3.3 activities								

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Note: 1 kt CO₂ eq equals 1 Gg CO₂ eq.

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

^a Reporting by a developed country Party on the information specified in the common tabular format does not 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.

^b Developed country Parties with a quantified economy-wide emission reduction target as communicated to the secretariat and contained in document FCCC/SB/2011/INF.1/Rev.1 or any update to that document, that are Parties to the Kyoto Protocol, may use table 4(a)II for reporting of accounting quantities if LULUCF is contributing to the attainment of that target.

^c Parties can include references to the relevant parts of the national inventory report, where accounting methodologies regarding LULUCF are further described in the documentation box or in the biennial

^d Net emissions and removals in the Party's base year, as established by decision 9/CP.2.

^e All values are reported in the information table on accounting for activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol, of the CRF for the relevant inventory year as reported in the current submission and are automatically entered in this table.

^f Additional columns for relevant years should be added, if applicable.

^g Cumulative net emissions and removals for all years of the commitment period reported in the current submission.

^h The values in the cells "3.3 offset" and "Forest management cap" are absolute values.

ⁱ The accounting quantity is the total quantity of units to be added to or subtracted from a Party's assigned amount for a particular activity in accordance with the provisions of Article 7, paragraph 4, of the Kyoto Protocol.

^j In accordance with paragraph 4 of the annex to decision 16/CMP.1, debits resulting from harvesting during the first commitment period following afforestation and reforestation since 1990 shall not be greater than the credits accounted for on that unit of land.

^k In accordance with paragraph 10 of the annex to decision 16/CMP.1, for the first commitment period a Party included in Annex I that incurs a net source of emissions under the provisions of Article 3 paragraph 3, may account for anthropogenic greenhouse gas emissions by sources and removals by sinks in areas under forest management under Article 3, paragraph 4, up to a level that is equal to the net source of emissions under the provisions of Article 3, paragraph 3, but not greater than 9.0 megatonnes of carbon times five, if the total anthropogenic greenhouse gas emissions by sources and removals by sinks in the managed forest since 1990 is equal to, or larger than, the net source of emissions incurred under Article 3, paragraph 3.

^l In accordance with paragraph 11 of the annex to decision 16/CMP.1, for the first commitment period of the Kyoto Protocol only, additions to and subtractions from the assigned amount of a Party resulting from Forest management under Article 3, paragraph 4, after the application of paragraph 10 of the annex to decision 16/CMP.1 and resulting from forest management project activities undertaken under Article 6, shall not exceed the value inscribed in the appendix of the annex to decision 16/CMP.1, times five.

Reporting on progress^{a, b, c}

<i>Units of market based mechanisms</i>			<i>Year</i>	
			<i>2011</i>	<i>2012</i>
<i>Kyoto Protocol units^d</i>	<i>Kyoto Protocol units</i>	<i>(number of units)</i>		
		<i>(kt CO₂ eq)</i>		
	<i>AAUs</i>	<i>(number of units)</i>		
		<i>(kt CO₂ eq)</i>		
	<i>ERUs</i>	<i>(number of units)</i>		
		<i>(kt CO₂ eq)</i>		
	<i>CERs</i>	<i>(number of units)</i>		
<i>(kt CO₂ eq)</i>				
<i>tCERs</i>	<i>(number of units)</i>			
	<i>(kt CO₂ eq)</i>			
<i>ICERs</i>	<i>(number of units)</i>			
	<i>(kt CO₂ eq)</i>			
<i>Other units^{d,e}</i>	<i>Units from market-based mechanisms under the Convention</i>	<i>(number of units)</i>		
		<i>(kt CO₂ eq)</i>		
	<i>Units from other market-based mechanisms</i>	<i>(number of units)</i>		
		<i>(kt CO₂ eq)</i>		
<i>Total</i>		<i>(number of units)</i>		
		<i>(kt CO₂ eq)</i>		

Abbreviations : AAUs = assigned amount units, CERs = certified emission reductions, ERUs = emission reduction units, ICERs = long-term certified emission reductions, tCERs = temporary certified emission reductions.

Note: 2011 is the latest reporting year.

^a 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.

^b For each reported year, information reported on progress made towards the emission reduction target shall include, in addition to the information noted in paragraphs 9(a-c) of the reporting guidelines, on the use of units from market-based mechanisms.

^c Parties may include this information, as appropriate and if relevant to their target.

^d Units surrendered by that Party for that year that have not been previously surrendered by that or any other Party.

^e Additional rows for each market-based mechanism should be added, if applicable.

Table 5

BGR_BR1_v3.0

Summary of key variables and assumptions used in the projections analysis^a

<i>Key underlying assumptions</i>		<i>Historical^b</i>							Projected			
<i>Assumption</i>	<i>Unit</i>	1988	1990	1995	2000	2005	2010	2011	2015	2020	2025	2030
GDP growth rate	%							2.80	3.28	4.32	3.44	2.75
Population	thousands						7.50	7.36	7.14	6.91	6.68	6.45
Population growth	%							-1.87	-0.99	-0.65	-0.69	-0.69
International oil price	USD / boe								86.00	88.50	89.20	93.10
International coal price	USD / boe								22.00	22.60	23.70	24.00
International gas price	USD / boe								53.80	61.50	58.90	64.50

^a Parties should include key underlying assumptions as appropriate.

^b Parties should include historical data used to develop the greenhouse gas projections reported.

Table 6(a)

BGR_BR1_v3.0

Information on updated greenhouse gas projections under a 'with measures' scenario^a

	GHG emissions and removals ^b							GHG emission projections	
	(kt CO ₂ eq)							(kt CO ₂ eq)	
	Base year (1988)	1990	1995	2000	2005	2010	2011	2020	2030
Sector^{d,e}									
Energy	83,801.00	75,529.27	53,029.72	42,350.76	46,624.37	46,741.63	52,203.74	46,640.00	44,201.00
Transport	7,380.26	6,793.93	4,710.69	5,739.41	7,697.10	7,954.29	8,129.01	12,685.00	19,876.00
Industry/industrial processes	11,959.94	8,846.52	9,421.59	6,234.58	6,636.83	3,563.08	3,977.93	4,214.00	5,410.00
Agriculture	20,206.36	18,198.35	8,209.03	6,237.32	6,206.78	6,185.58	6,148.50	6,675.00	7,250.00
Forestry/LULUCF	-14,340.02	-14,048.81	-13,177.57	-8,918.24	-8,934.39	-8,109.04	-7,979.42	-11,806.00	-11,828.00
Waste management/waste	5,789.11	6,069.00	5,082.79	4,609.69	4,230.51	3,816.33	3,761.83	3,453.00	3,251.00
Other (specify)									
Gas									
CO ₂ emissions including net CO ₂ from LULUCF	75,587.88	66,016.40	44,700.92	36,231.78	41,202.27	39,475.10	45,075.34	43,809.71	41,230.58
CO ₂ emissions excluding net CO ₂ from LULUCF	90,092.25	80,231.67	58,043.16	45,522.77	50,304.58	47,770.50	53,243.42	47,206.00	45,522.00
CH ₄ emissions including CH ₄ from LULUCF	17,260.77	16,972.28	10,999.22	8,703.65	7,935.27	7,397.82	7,703.98	7,972.00	8,056.00
CH ₄ emissions excluding CH ₄ from LULUCF	17,259.40	16,969.21	10,997.60	8,532.67	7,931.00	7,360.55	7,682.83	7,997.00	8,080.00
N ₂ O emissions including N ₂ O from LULUCF	14,744.32	12,499.52	6,953.51	5,622.33	5,556.82	5,014.45	4,963.90	5,138.00	5,722.00
N ₂ O emissions excluding N ₂ O from LULUCF	14,581.33	12,336.13	6,790.46	5,420.55	5,393.17	4,847.37	4,796.38	5,375.00	5,960.00
HFCs	NA	NA	2.39	17.95	111.86	360.88	395.74	376.28	537.32
PFCs						0.04	0.05	0.04	0.04
SF ₆	3.46	3.87	5.13	6.80	8.56	13.07	14.87	28.00	11.00
Other (specify)									
Total with LULUCF^f	107,596.43	95,492.07	62,661.17	50,582.51	54,814.78	52,261.36	58,153.88	57,324.03	55,556.94
Total without LULUCF	121,936.44	109,540.88	75,838.74	59,500.74	63,749.17	60,352.41	66,133.29	60,982.32	60,110.36

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

^a 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.

Information on updated greenhouse gas projections under a ‘with measures’ scenario^a

	<i>GHG emissions and removals^b</i>							GHG emission projections	
	<i>(kt CO₂ eq)</i>							<i>(kt CO₂ eq)</i>	
	<i>Base year (1988)</i>	1990	1995	2000	2005	2010	2011	2020	2030

^b 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.

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

^d 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.

^e 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.

^f Parties may choose to report total emissions with or without LULUCF, as appropriate.

Table 6(c)

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Information on updated greenhouse gas projections under a ‘with additional measures’ scenario^a

	GHG emissions and removals ^b							GHG emission projections	
	(kt CO ₂ eq)								
	Base year (1988)	1990	1995	2000	2005	2010	2011	2020	2030
Sector^{d,e}									
Energy	83,801.00	75,529.27	53,029.72	42,350.76	46,624.37	46,741.63	52,203.74	40,937.00	37,398.00
Transport	7,380.26	6,793.93	4,710.69	5,739.41	7,697.10	7,954.29	8,129.01	11,319.00	17,606.00
Industry/industrial processes	11,959.94	8,846.52	9,421.59	6,234.58	6,636.83	3,563.08	3,977.93	4,214.00	5,410.00
Agriculture	20,206.36	18,198.35	8,209.03	6,237.32	6,206.78	6,185.58	6,148.50	6,672.00	7,246.00
Forestry/LULUCF	-14,340.02	-14,048.81	-13,177.57	-8,918.24	-8,934.39	-8,109.04	-7,979.42	-11,817.00	-11,839.00
Waste management/waste	5,789.11	6,069.00	5,082.79	4,609.69	4,230.51	3,816.33	3,761.83	1,887.00	1,770.00
Other (specify)									
Gas									
CO ₂ emissions including net CO ₂ from LULUCF	75,587.88	66,016.40	44,700.92	36,231.78	41,202.27	39,475.10	45,075.34	40,520.46	37,941.33
CO ₂ emissions excluding net CO ₂ from LULUCF	90,092.25	80,231.67	58,043.16	45,522.77	50,304.58	47,770.50	53,243.42	41,667.00	38,977.00
CH ₄ emissions including CH ₄ from LULUCF	17,260.77	16,972.28	10,999.22	8,703.65	7,935.27	7,397.82	7,703.98	6,384.00	6,477.00
CH ₄ emissions excluding CH ₄ from LULUCF	17,259.40	16,969.21	10,997.60	8,532.67	7,931.00	7,360.55	7,682.83	6,409.00	6,501.00
N ₂ O emissions including N ₂ O from LULUCF	14,744.32	12,499.52	6,953.51	5,622.33	5,556.82	5,014.45	4,963.90	4,991.00	5,559.00
N ₂ O emissions excluding N ₂ O from LULUCF	14,581.33	12,336.13	6,790.46	5,420.55	5,393.17	4,847.37	4,796.38	5,229.00	5,798.00
HFCs	NA	NA	2.39	17.95	111.86	360.88	395.74	376.28	537.32
PFCs						0.04	0.05	0.04	0.04
SF ₆	3.46	3.87	5.13	6.80	8.56	13.07	14.87	28.00	11.00
Other (specify)									
Total with LULUCF^f	107,596.43	95,492.07	62,661.17	50,582.51	54,814.78	52,261.36	58,153.88	52,299.78	50,525.69
Total without LULUCF	121,936.44	109,540.88	75,838.74	59,500.74	63,749.17	60,352.41	66,133.29	53,709.32	51,824.36

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

^a 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.

Information on updated greenhouse gas projections under a ‘with additional measures’ scenario^a

	<i>GHG emissions and removals^b</i>							GHG emission projections	
	<i>(kt CO₂ eq)</i>							<i>(kt CO₂ eq)</i>	
	<i>Base year (1988)</i>	1990	1995	2000	2005	2010	2011	2020	2030

^b 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.

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

^d 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.

^e 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.

^f Parties may choose to report total emissions with or without LULUCF, as appropriate.

Table 7

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Provision of public financial support: summary information in 2011^a

Allocation channels	Year									
	Bulgarian lev - BGN					USD ^b				
	Core/ general ^c	Climate-specific ^d				Core/ general ^c	Climate-specific ^d			
		Mitigation	Adaptation	Cross-cutting ^e	Other ^f		Mitigation	Adaptation	Cross-cutting ^e	Other ^f
Total contributions through multilateral channels:	39,116.60					25,231.95				
Multilateral climate change funds ^g										
Other multilateral climate change funds ^h										
Multilateral financial institutions, including regional development banks										
Specialized United Nations bodies	39,116.60					25,231.95				
Total contributions through bilateral, regional and other channels										
Total	39,116.60					25,231.95				

Abbreviation: USD = United States dollars.

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

^b Parties should provide an explanation on methodology used for currency exchange for the information provided in table 7, 7(a) and 7(b) in the box below.

^c This refers to support to multilateral institutions that Parties cannot specify as climate-specific.

^d Parties should explain in their biennial reports how they define funds as being climate-specific.

^e This refers to funding for activities which are cross-cutting across mitigation and adaptation.

^f Please specify.

^g Multilateral climate change funds listed in paragraph 17(a) of the “UNFCCC biennial reporting guidelines for developed country Parties” in decision 2/CP.17.

^h Other multilateral climate change funds as referred in paragraph 17(b) of the “UNFCCC biennial reporting guidelines for developed country Parties” in decision 2/CP.17.

Custom Footnotes

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

Table 7

BGR_BR1_v3.0

Provision of public financial support: summary information in 2012^a

Allocation channels	Year									
	Bulgarian lev - BGN					USD ^b				
	Core/ general ^c	Climate-specific ^d				Core/ general ^c	Climate-specific ^d			
		Mitigation	Adaptation	Cross-cutting ^e	Other ^f		Mitigation	Adaptation	Cross-cutting ^e	Other ^f
Total contributions through multilateral channels:	39,116.60					25,231.65				
Multilateral climate change funds ^g										
Other multilateral climate change funds ^h										
Multilateral financial institutions, including regional development banks										
Specialized United Nations bodies	39,116.60					25,231.65				
Total contributions through bilateral, regional and other channels										
Total	39,116.60					25,231.65				

Abbreviation: USD = United States dollars.

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

^b Parties should provide an explanation on methodology used for currency exchange for the information provided in table 7, 7(a) and 7(b) in the box below.

^c This refers to support to multilateral institutions that Parties cannot specify as climate-specific.

^d Parties should explain in their biennial reports how they define funds as being climate-specific.

^e This refers to funding for activities which are cross-cutting across mitigation and adaptation.

^f Please specify.

^g Multilateral climate change funds listed in paragraph 17(a) of the “UNFCCC biennial reporting guidelines for developed country Parties” in decision 2/CP.17.

^h Other multilateral climate change funds as referred in paragraph 17(b) of the “UNFCCC biennial reporting guidelines for developed country Parties” in decision 2/CP.17.

Custom Footnotes

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

Provision of public financial support: contribution through multilateral channels in 2011^a

<i>Donor funding</i>	<i>Total amount</i>				<i>Status^b</i>	<i>Funding source^f</i>	<i>Financial instrument^f</i>	<i>Type of support^{f,8}</i>	<i>Sector^c</i>
	<i>Core/general^d</i>		<i>Climate-specific^e</i>						
	<i>Bulgarian lev - BGN</i>	<i>USD</i>	<i>Bulgarian lev - BGN</i>	<i>USD</i>					
Total contributions through multilateral channels	39,116.60	25,231.95							
Multilateral climate change funds ^g									
1. Global Environment Facility									
2. Least Developed Countries Fund									
3. Special Climate Change Fund									
4. Adaptation Fund									
5. Green Climate Fund									
6. UNFCCC Trust Fund for Supplementary Activities									
7. Other multilateral climate change funds									
Multilateral financial institutions, including regional development banks									
1. World Bank									
2. International Finance Corporation									
3. African Development Bank									
4. Asian Development Bank									
5. European Bank for Reconstruction and Development									
6. Inter-American Development Bank									
7. Other									
Specialized United Nations bodies	39,116.60	25,231.95							
1. United Nations Development Programme	39,116.60	25,231.95							
	39,116.60	25,231.95			Provided		Grant	Mitigation	
2. United Nations Environment Programme									
3. Other									

Abbreviations: ODA = official development assistance, OOF = other official flows.

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

^b Parties should explain, in their biennial reports, the methodologies used to specify the funds as provided, committed and/or pledged. Parties will provide the information for as many status categories as appropriate in the following order of priority: provided, committed, pledged.

^c Parties may select several applicable sectors. Parties may report sectoral distribution, as applicable, under "Other".

^d This refers to support to multilateral institutions that Parties cannot specify as climate-specific.

^e Parties should explain in their biennial reports how they define funds as being climate-specific.

^f Please specify.

^g Cross-cutting type of support refers to funding for activities which are cross-cutting across mitigation and adaptation.

Table 7(a)

BGR_BR1_v3.0

Provision of public financial support: contribution through multilateral channels in 2012^a

Donor funding	Total amount				Status ^b	Funding source ^f	Financial instrument ^f	Type of support ^{f, g}	Sector ^c
	Core/general ^d		Climate-specific ^e						
	Bulgarian lev - BGN	USD	Bulgarian lev - BGN	USD					
Total contributions through multilateral channels	39,116.60	25,231.65							
Multilateral climate change funds ^g									
1. Global Environment Facility									
2. Least Developed Countries Fund									
3. Special Climate Change Fund									
4. Adaptation Fund									
5. Green Climate Fund									
6. UNFCCC Trust Fund for Supplementary Activities									
7. Other multilateral climate change funds									
Multilateral financial institutions, including regional development banks									
1. World Bank									
2. International Finance Corporation									
3. African Development Bank									
4. Asian Development Bank									
5. European Bank for Reconstruction and Development									
6. Inter-American Development Bank									
7. Other									
Specialized United Nations bodies	39,116.60	25,231.65							
1. United Nations Development Programme	39,116.60	25,231.65							
	39,116.60	25,231.65			Provided	Grant	Mitigation	Cross-cutting	
2. United Nations Environment Programme									
3. Other									

Abbreviations: ODA = official development assistance, OOF = other official flows.

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

^b Parties should explain, in their biennial reports, the methodologies used to specify the funds as provided, committed and/or pledged. Parties will provide the information for as many status categories as appropriate in the following order of priority: provided, committed, pledged.

^c Parties may select several applicable sectors. Parties may report sectoral distribution, as applicable, under "Other".

^d This refers to support to multilateral institutions that Parties cannot specify as climate-specific.

^e Parties should explain in their biennial reports how they define funds as being climate-specific.

^f Please specify.

^g Cross-cutting type of support refers to funding for activities which are cross-cutting across mitigation and adaptation.

Provision of public financial support: contribution through bilateral, regional and other channels in 2011^a

<i>Recipient country/ region/project/programme^b</i>	<i>Total amount</i>		<i>Status^c</i>	<i>Funding source^g</i>	<i>Financial instrument^g</i>	<i>Type of support^{g, h}</i>	<i>Sector^d</i>	<i>Additional information^e</i>
	<i>Climate-specific^f</i>							
	<i>Bulgarian lev - BGN</i>	<i>USD</i>						
Total contributions through bilateral, regional and other channels								

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

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

^b Parties should report, to the extent possible, on details contained in this table.

^c Parties should explain, in their biennial reports, the methodologies used to specify the funds as provided, committed and/or pledged. Parties will provide the information for as many status categories as appropriate in the following order of priority: provided, committed, pledged.

^d Parties may select several applicable sectors. Parties may report sectoral distribution, as applicable, under "Other".

^e Parties should report, as appropriate, on project details and the implementing agency.

^f Parties should explain in their biennial reports how they define funds as being climate-specific.

^g Please specify.

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

Provision of public financial support: contribution through bilateral, regional and other channels in 2012^a

<i>Recipient country/ region/project/programme^b</i>	<i>Total amount</i>		<i>Status^c</i>	<i>Funding source^g</i>	<i>Financial instrument^g</i>	<i>Type of support^{g, h}</i>	<i>Sector^d</i>	<i>Additional information^e</i>
	<i>Climate-specific^f</i>							
	<i>Bulgarian lev - BGN</i>	<i>USD</i>						
Total contributions through bilateral, regional and other channels								

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

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

^b Parties should report, to the extent possible, on details contained in this table.

^c Parties should explain, in their biennial reports, the methodologies used to specify the funds as provided, committed and/or pledged. Parties will provide the information for as many status categories as appropriate in the following order of priority: provided, committed, pledged.

^d Parties may select several applicable sectors. Parties may report sectoral distribution, as applicable, under "Other".

^e Parties should report, as appropriate, on project details and the implementing agency.

^f Parties should explain in their biennial reports how they define funds as being climate-specific.

^g Please specify.

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

Provision of technology development and transfer support^{a,b}

<i>Recipient country and/or region</i>	<i>Targeted area</i>	<i>Measures and activities related to technology transfer</i>	<i>Sector^c</i>	<i>Source of the funding for technology transfer</i>	<i>Activities undertaken by</i>	<i>Status</i>	<i>Additional information^d</i>

^a To be reported to the extent possible.

^b The tables should include measures and activities since the last national communication or biennial report.

^c Parties may report sectoral disaggregation, as appropriate.

^d Additional information may include, for example, funding for technology development and transfer provided, a short description of the measure or activity and co-financing arrangements.

Provision of capacity-building support^a

<i>Recipient country/region</i>	<i>Targeted area</i>	<i>Programme or project title</i>	<i>Description of programme or project^{b,c}</i>

^a To be reported to the extent possible.

^b Each Party included in Annex II to the Convention shall provide information, to the extent possible, on how it has provided capacity-building support that responds to the existing and emerging capacity-building needs identified by Parties not included in Annex I to the Convention in the areas of mitigation, adaptation and technology development and transfer.

^c Additional information may be provided on, for example, the measure or activity and co-financing arrangements.