



2014

BELGIUM'S FIRST BIENNIAL REPORT ON CLIMATE CHANGE

Under the United Nations Framework Convention on Climate Change

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1. Preamble

Belgium is pleased to submit its first Biennial report.

This report has been elaborated in accordance with the UNFCCC biennial reporting guidelines for developed country Parties contained in Decision 2/CP.17 (Outcome of the work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention - Document: FCCC/CP/2011/9/Add.1) adopted by the Conference of the Parties on its seventeenth session.

In accordance with decision 2/CP.17, Belgium has decided to present its biennial report as a separate report.

As requested (Decision 19/CP.18 - Document: FCCC/CP/2012/8/Add.3) the Common tabular format (CTF) included in this report has also been deposited on the BR-CTF electronic reporting application.

Cross reference to NC6 are clearly indicated in the text in italics.

This reporting is performed in a transition period, which causes a number of difficulties related to the timing as some decisions are still under discussion (e.g. ratification of international commitments and EU MS for CP2). The reporting will be improved during the next submission (BR2).

Belgium's contribution to the achievement of the joint EU quantified economy-wide emission reduction targets is mainly highlighted. Other specific Belgian targets are also listed if not covered by the EU targets.

Historical information concerning the second commitment period under the Kyoto Protocol is not yet available, but when such information was available concerning the first commitment period under the Kyoto Protocol it has been provided for transparency purposes.

2. Information on greenhouse gas emissions and trends

2.1 Introduction and summary information from the national GHG inventory

Inventory information presented in this chapter is extracted from the November 2013 re-submission. In the Sixth National Communication, data refer to the April 2013 submission.

Recalculations lead to increased emissions (inventory year 2011): + 136.58 kt CO₂ eq. (an increase of 0.11% of net emissions compared to submission 15 April 2013).

- 2B1 : + 5.54 kt CO₂ eq.
- 4A: + 124.08 kt CO₂ eq.
- 4B: + 6.89 kt CO₂ eq.
- 4D3: + 0.07 kt CO₂ eq.

The legal basis of the compilation of the Belgian inventory and the inventory methodology and data availability are also described briefly. The greenhouse gas data presented in this chapter are consistent with the 2013 Belgian submission to the United Nations Framework Convention on Climate Change (UNFCCC) Secretariat¹.

¹ The last official submission (BEL-2013-v1.6) was made on 8 November 2013 as a result of the 2013 annual review and following recommendations of the “Saturday paper”. Therefore the figures used in the 6th National Communication are slightly different because it is based on the submission of 15 April 2013 (BEL-2013-v1.5).

Summary tables of GHG emissions and emission trends by gas and by sector in the common tabular format are presented in CTF Tables 1 (a) and 1(b) in the CTF Annex. These data and the complete submission under Council Decision 280/2004/EC are available on the EEA website (<http://cdr.eionet.europa.eu/be/eu/ghgmm/en-vunypcq>).

In Belgium, total greenhouse gas emissions (without LULUCF) amounted to 120.3 Mt CO₂ eq. in 2011 and to 120.5 Mt eq. CO₂ including KP-LULUCF article 3.3. They dropped by 17.3% in 2011 compared with the base year emissions. However, this favourable trend masks contrasting tendencies among the various sectors.

On the one hand, road transport emissions increased continuously since 1990 due to the growing number of cars and intensification of traffic, although traffic increase slowed down significantly in recent years.

Emissions from the residential and tertiary sectors fell in 2011 in comparison with recent years although a number of drivers/indicators such as the number of dwellings and the number of employees in the tertiary and institutional sectors are

rising. This is because of an exceptionally mild year which has had a considerable impact on the global trend for emissions in Belgium. This being so, the trend for the

tertiary sector since 1990 continues to be a net increase of emissions.

On the other hand, the switch from solid fuels to gaseous fuels is observed in the electricity production sector and industry. Together with the development of biomass

fuels in some sectors, this has resulted in a reduction of the CO₂ emission factor per unit of energy consumed. The more rational use of energy is also developing but

CTF Table 1 : Emission trends (CO₂)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year (1990)	1991	1992	1993	1994	1995	1996	1997	1998	1999
	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)
1. Energy	110.386,73	113.252,50	111.872,55	110.893,06	114.184,49	114.693,18	119.425,33	113.448,82	119.611,34	113.814,31
A. Fuel Combustion (Sectoral Approach)	110.302,28	113.169,36	111.789,18	110.809,43	114.100,60	114.609,06	119.332,88	113.355,61	119.511,36	113.704,40
1. Energy Industries	29.789,13	29.709,61	28.550,42	28.023,76	29.802,19	29.222,91	29.026,05	27.889,67	30.609,38	26.919,49
2. Manufacturing Industries and Construction	32.604,84	32.519,63	31.721,33	30.624,37	32.044,76	32.492,30	31.808,21	30.998,75	33.448,50	31.995,19
3. Transport	20.426,97	20.599,33	21.327,06	21.817,10	22.284,67	22.362,71	22.786,97	22.988,72	23.655,42	24.001,53
4. Other Sectors	27.320,06	30.179,43	30.029,19	30.184,42	29.808,83	30.427,51	35.623,84	31.382,36	31.705,15	30.695,29
5. Other	161,28	161,36	161,19	159,78	160,16	103,61	87,83	96,12	92,91	92,90
B. Fugitive Emissions from Fuels	84,45	83,14	83,37	83,63	83,89	84,13	92,44	93,20	99,97	109,91
1. Solid Fuels	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
2. Oil and Natural Gas	84,45	83,14	83,37	83,63	83,89	84,13	92,44	93,20	99,97	109,91
2. Industrial Processes	8.419,50	8.008,86	7.846,06	7.827,86	9.130,22	9.587,66	8.879,52	9.213,35	9.320,92	9.568,91
A. Mineral Products	5.750,33	5.381,69	5.585,75	5.565,32	5.898,60	6.192,36	5.669,69	5.880,46	5.966,78	6.052,44
B. Chemical Industry	646,79	617,76	434,02	483,87	1.278,67	1.420,06	1.482,16	1.524,38	1.463,64	1.675,12
C. Metal Production	2.022,38	2.009,41	1.826,30	1.778,67	1.952,96	1.975,25	1.727,67	1.808,51	1.890,49	1.841,34
D. Other Production	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE
E. Production of Halocarbons and SF ₆										
F. Consumption of Halocarbons and SF ₆										
G. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3. Solvent and Other Product Use	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

often goes together with an increased use of electricity, so its impact on actual emissions is generally more difficult to quantify. Finally, the closure of certain iron and

steel works over the past few years has also lead to lower emissions. This industrial development is likely to continue.

In agriculture, CH₄ and N₂O emissions are decreasing, reflecting a drop in the live-stock population and certain changes in agricultural practices. In solid waste disposal,

biogas recovery and use has resulted in a net reduction of CH₄ emissions.

For more information see Chapter 3 of NC6.

2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Change from base to latest reported year
(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	%
115.415,59	115.934,52	114.658,88	117.892,65	118.295,46	114.884,51	111.078,31	106.736,02	110.034,47	100.569,15	106.711,16	96.361,31	-12,71
115.250,39	115.786,99	114.506,02	117.781,39	118.193,20	114.780,27	110.947,76	106.621,23	109.917,90	100.451,93	106.608,07	96.268,18	-12,72
28.300,61	26.783,03	28.283,29	29.388,63	29.552,21	29.281,16	27.788,65	27.276,38	25.316,06	25.713,21	26.246,38	21.860,53	-26,62
33.148,48	32.329,66	31.059,05	30.473,33	30.487,15	28.689,25	28.828,05	27.594,98	28.137,76	19.797,61	23.389,21	23.346,37	-28,40
24.453,25	25.071,77	25.389,59	25.950,18	26.954,33	26.040,81	25.483,49	25.369,44	27.667,31	26.934,13	26.856,90	26.772,64	31,07
29.255,50	31.507,86	29.680,55	31.877,63	31.107,89	30.676,93	28.755,43	26.312,76	28.735,87	27.951,37	30.068,13	24.239,03	-11,28
92,55	94,68	93,54	91,61	91,63	92,12	92,13	67,67	60,92	55,61	47,45	49,60	-69,25
165,20	147,53	152,86	111,26	102,26	104,25	130,55	114,79	116,56	117,22	103,09	93,14	10,28
NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0,00
165,20	147,53	152,86	111,26	102,26	104,25	130,55	114,79	116,56	117,22	103,09	93,14	10,28
9.668,97	9.106,11	9.894,27	9.811,36	10.068,02	10.151,21	10.116,67	9.971,12	9.803,97	7.090,30	7.476,29	7.585,52	-9,91
6.143,50	5.800,90	6.320,59	5.829,10	5.802,95	5.765,20	6.045,58	5.898,67	5.961,23	4.690,98	4.804,55	5.095,96	-11,38
1.646,91	1.650,74	1.767,56	2.228,17	2.477,85	2.684,78	2.279,71	2.422,84	2.186,54	1.540,47	1.773,05	1.949,77	201,45
1.878,56	1.654,48	1.806,13	1.754,09	1.787,22	1.701,23	1.791,38	1.649,61	1.656,20	858,86	898,69	539,79	-73,31
IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	0,00
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0,00
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0,00

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year (1990)	1991	1992	1993	1994	1995	1996	1997	1998	1999
	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)
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⁽²⁾	-927,38	-653,91	-950,63	-880,30	-906,06	-746,59	-546,60	-814,39	-712,31	-748,18
A. Forest Land	-3.138,08	-2.883,89	-3.199,89	-3.150,87	-3.194,55	-3.053,72	-2.874,42	-3.160,44	-3.077,57	-3.132,55
B. Cropland	1.169,15	1.199,97	1.230,79	1.261,62	1.292,44	1.323,27	1.354,09	1.384,92	1.415,75	1.446,58
C. Grassland	744,74	705,92	667,11	630,32	590,13	550,67	513,25	473,36	434,45	395,44
D. Wetlands	20,55	19,65	18,76	17,87	16,97	16,08	15,19	14,30	13,41	12,51
E. Settlements	248,03	274,03	300,04	326,05	352,07	378,08	404,10	430,12	456,14	482,16
F. Other Land	28,23	30,39	32,55	34,71	36,87	39,04	41,20	43,36	45,52	47,68
G. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
6. Waste	290,25	292,80	297,70	298,39	190,40	146,88	153,25	165,09	138,83	168,80
A. Solid Waste Disposal on Land	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO
B. Waste-water Handling										
C. Waste Incineration	290,25	292,80	297,70	298,39	190,40	146,88	153,25	165,09	138,83	168,80
D. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7. Other (as specified in Summary 1.A)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Total CO₂ emissions including net CO₂ from LULUCF	118.169,09	120.900,26	119.065,69	118.139,01	122.599,05	123.681,14	127.911,50	122.012,87	128.358,77	122.803,84

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year (1990)	1991	1992	1993	1994	1995	1996	1997	1998	1999
	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)
Total CO₂ emissions excluding net CO₂ from LULUCF	119.096,48	121.554,17	120.016,32	119.019,31	123.505,12	124.427,72	128.458,10	122.827,25	129.071,08	123.552,02
Memo Items:										
International Bunkers	16.397,83	16.058,65	15.840,60	16.347,83	16.730,40	15.837,61	19.226,65	21.205,85	22.461,54	19.421,40
Aviation	3.094,75	2.599,52	2.584,02	2.558,01	2.518,47	2.882,88	3.336,55	3.596,43	4.059,67	4.576,18
Marine	13.303,08	13.459,13	13.256,58	13.789,83	14.211,93	12.954,73	15.890,10	17.609,41	18.401,87	14.845,22
Multilateral Operations	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CO₂ Emissions from Biomass	1.997,68	2.016,29	2.171,90	1.781,32	2.062,74	2.283,61	2.366,32	2.439,72	2.496,10	2.605,68

Emission trends (CH₄)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year (1990)	1991	1992	1993	1994	1995	1996	1997	1998	1999
	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)
1. Energy	63,56	58,62	51,67	52,79	45,93	46,25	46,40	42,75	41,39	40,35
A. Fuel Combustion (Sectoral Approach)	22,70	23,68	23,31	22,59	20,37	20,35	21,31	19,02	18,59	17,54
1. Energy Industries	0,83	0,82	0,77	0,76	0,78	0,77	0,67	0,62	0,66	0,56
2. Manufacturing Industries and Construction	3,94	3,69	3,35	3,04	3,10	3,16	2,96	2,99	3,25	3,17
3. Transport	6,07	6,13	6,48	6,28	6,04	5,97	5,72	5,06	4,82	4,40
4. Other Sectors	11,85	13,04	12,70	12,50	10,45	10,44	11,95	10,35	9,86	9,40
5. Other	0,00	0,00	0,00	0,00	0,00	0,01	0,01	0,01	0,01	0,01
B. Fugitive Emissions from Fuels	40,86	34,94	28,36	30,19	25,56	25,90	25,09	23,73	22,79	22,81
1. Solid Fuels	15,70	9,98	4,10	0,89	0,83	0,83	0,83	0,75	0,65	0,62
2. Oil and Natural Gas	25,16	24,96	24,26	29,30	24,73	25,06	24,25	22,98	22,14	22,18

2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Change from base to latest reported year
(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	%
125.256,16	125.227,83	124.977,60	128.167,27	128.870,46	125.617,23	121.805,45	117.442,49	120.537,51	108.257,72	114.878,25	104.472,11	-12,28
20.697,04	20.402,46	26.138,57	26.782,49	27.960,41	28.487,53	30.961,51	34.399,21	35.252,91	26.596,15	25.076,21	29.539,49	80,14
4.645,52	4.201,88	3.497,45	3.812,23	3.713,58	3.531,20	3.676,87	3.971,90	4.282,75	3.900,34	4.118,64	4.251,31	37,37
16.051,52	16.200,58	22.641,12	22.970,26	24.246,82	24.956,33	27.284,64	30.427,32	30.970,15	22.695,81	20.957,57	25.288,18	90,09
NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0,00
2.660,04	2.891,92	3.010,52	3.562,80	4.106,76	4.472,88	5.264,62	6.073,83	7.174,70	8.295,80	9.683,03	9.745,59	387,84

2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Change from base to latest reported year
(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	%
38,33	38,43	35,52	34,92	34,60	34,55	34,74	34,67	34,41	33,05	36,57	32,28	-49,21
16,12	16,53	14,75	15,06	15,00	14,24	14,58	14,59	15,46	14,06	15,35	12,87	-43,31
0,66	0,65	0,64	0,64	0,65	0,66	0,97	1,66	1,66	1,68	1,96	1,82	117,86
3,61	3,64	3,49	3,64	3,73	3,27	3,61	3,25	3,82	2,53	3,21	2,85	-27,51
3,16	2,89	2,57	2,37	2,12	1,82	1,50	1,29	1,14	0,94	0,93	0,90	-85,27
8,69	9,35	8,04	8,39	8,50	8,49	8,49	8,38	8,84	8,91	9,26	7,29	-38,43
0,01	0,01	0,01	0,01	0,01	0,00	0,01	0,00	0,00	0,00	0,00	0,00	65,80
22,20	21,90	20,77	19,86	19,60	20,31	20,16	20,08	18,95	19,00	21,22	19,41	-52,49
0,63	0,64	0,54	0,53	0,57	0,56	0,57	0,50	0,30	0,19	0,29	0,28	-98,23
21,57	21,26	20,23	19,33	19,03	19,75	19,60	19,58	18,66	18,80	20,92	19,14	-23,95

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year (1990)	1991	1992	1993	1994	1995	1996	1997	1998	1999
	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)
2. Industrial Processes	0,00	0,01	0,01	0,12	0,15	0,13	0,19	0,19	0,27	0,26
A. Mineral Products	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO
B. Chemical Industry	0,00	0,01	0,01	0,12	0,15	0,13	0,19	0,19	0,27	0,26
C. Metal Production	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
D. Other Production										
E. Production of Halocarbons and SF ₆										
F. Consumption of Halocarbons and SF ₆										
G. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3. Solvent and Other Product Use										
4. Agriculture	270,02	266,75	266,11	270,55	270,01	273,95	270,33	268,66	268,71	270,11
A. Enteric Fermentation	201,55	200,46	198,48	200,72	200,46	202,60	198,83	196,71	195,02	195,53
B. Manure Management	68,47	66,29	67,63	69,83	69,55	71,34	71,50	71,96	73,69	74,58
C. Rice Cultivation	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
D. Agricultural Soils	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E. Prescribed Burning of Savannas	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
F. Field Burning of Agricultural Residues	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
G. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5. Land Use, Land-Use Change and Forestry	0,02	0,02	0,02	0,02	0,02	0,00	1,09	0,01	0,02	0,00
A. Forest Land	0,02	0,02	0,02	0,01	0,02	0,00	1,08	0,01	0,02	0,00
B. Cropland	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO
C. Grassland	NE,NO	NE,NO	NE,NO	0,01	0,00	NE,NO	0,01	0,00	0,00	0,00
D. Wetlands	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,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

2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Change from base to latest reported year
(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	%
0,20	0,27	0,35	0,41	0,94	2,52	2,97	3,30	2,57	1,03	0,94	0,56	92.432,88
NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	0,00
0,20	0,25	0,35	0,41	0,52	0,56	0,27	0,55	0,28	0,18	0,33	0,09	13.903,37
IE,NA,NO	0,02	IE,NA,NO	IE,NA,NO	0,42	1,96	2,70	2,75	2,29	0,84	0,60	0,48	100,00
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0,00
260,88	258,66	250,59	242,61	240,07	236,90	235,06	240,48	238,85	239,55	241,61	238,05	-11,84
189,56	189,75	183,37	177,22	176,03	173,51	171,89	175,73	173,94	174,08	174,73	171,76	-14,78
71,32	68,92	67,22	65,39	64,04	63,39	63,17	64,75	64,91	65,46	66,88	66,29	-3,18
NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0,00
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0,00
NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0,00
NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0,00
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0,00
0,00	0,00	0,01	0,01	NE,NO	0,00	0,00	0,00	NE,NO	NE,NO	NE,NO	0,30	1.204,88
0,00	0,00	0,01	0,01	NE,NO	0,00	0,00	0,00	NE,NO	NE,NO	NE,NO	0,13	466,67
NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	0,00
0,00	NE,NO	NE,NO	0,00	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	0,17	100,00
NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	0,00
NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0,00
NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0,00
NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0,00

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year (1990)	1991	1992	1993	1994	1995	1996	1997	1998	1999
	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)
6. Waste	134,59	134,12	134,87	124,76	130,64	127,97	119,84	118,86	113,39	106,84
A. Solid Waste Disposal on Land	124,47	123,94	124,61	114,49	120,36	117,78	109,76	108,97	103,85	98,74
B. Waste-water Handling	10,02	10,07	10,13	10,13	10,11	9,91	9,71	9,37	8,98	7,46
C. Waste Incineration	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
D. Other	0,10	0,10	0,13	0,14	0,16	0,27	0,37	0,52	0,56	0,63
7. Other (as specified in Summary 1.A)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Total CH₄ emissions including CH₄ from LULUCF	468,19	459,52	452,68	448,24	446,74	448,30	437,85	430,47	423,77	417,55
Total CH₄ emissions excluding CH₄ from LULUCF	468,16	459,50	452,66	448,21	446,73	448,29	436,76	430,46	423,75	417,55
Memo Items:										
International Bunkers	0,11	0,11	0,11	0,10	0,11	0,11	0,12	0,12	0,12	0,13
Aviation	0,06	0,06	0,06	0,06	0,06	0,07	0,07	0,07	0,08	0,08
Marine	0,05	0,05	0,05	0,05	0,05	0,05	0,05	0,05	0,05	0,05
Multilateral Operations	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CO₂ Emissions from Biomass										

2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Change from base to latest reported year
(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	%
102,14	88,09	79,00	65,22	64,12	56,17	53,04	46,57	41,71	39,84	37,13	37,51	-72,13
94,42	81,27	72,55	59,09	58,18	50,39	47,01	40,78	36,23	34,17	31,24	31,45	-74,73
7,03	6,16	5,75	5,49	5,24	5,11	5,11	4,81	4,57	4,65	4,74	4,84	-51,73
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0,00
0,70	0,66	0,69	0,64	0,70	0,67	0,93	0,98	0,90	1,02	1,15	1,22	1.076,78
NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0,00
401,55	385,46	365,47	343,16	339,73	330,14	325,82	325,00	317,54	313,47	316,26	308,70	-34,06
401,55	385,46	365,46	343,15	339,73	330,14	325,82	325,00	317,54	313,47	316,26	308,40	-34,12
0,13	0,12	0,11	0,11	0,11	0,11	0,10	0,11	0,11	0,09	0,09	0,09	-15,19
0,08	0,08	0,07	0,07	0,07	0,07	0,07	0,07	0,07	0,06	0,06	0,06	12,82
0,04	0,04	0,04	0,04	0,04	0,04	0,03	0,04	0,03	0,03	0,03	0,03	-44,54
NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0,00

Emission trends (N₂O)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year (1990)	1991	1992	1993	1994	1995	1996	1997	1998	1999
	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)
1. Energy	2,11	2,23	2,28	2,36	2,48	2,57	2,75	2,74	2,87	2,87
A. Fuel Combustion (Sectoral Approach)	2,11	2,23	2,28	2,36	2,48	2,57	2,75	2,74	2,87	2,87
1. Energy Industries	0,59	0,65	0,65	0,63	0,64	0,59	0,66	0,67	0,70	0,64
2. Manufacturing Industries and Construction	0,34	0,33	0,33	0,31	0,30	0,32	0,29	0,30	0,31	0,33
3. Transport	0,84	0,89	0,95	1,06	1,19	1,31	1,41	1,42	1,51	1,55
4. Other Sectors	0,33	0,35	0,35	0,35	0,34	0,35	0,39	0,35	0,35	0,35
5. Other	0,01	0,01	0,01	0,01	0,01	0,00	0,00	0,00	0,00	0,00
B. Fugitive Emissions from Fuels	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
1. Solid Fuels	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
2. Oil and Natural Gas	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
2. Industrial Processes	12,72	12,39	11,35	12,15	13,83	14,99	16,45	15,44	15,65	15,17
A. Mineral Products	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO
B. Chemical Industry	12,72	12,39	11,35	12,15	13,83	14,99	16,45	15,44	15,65	15,17
C. Metal Production	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
D. Other Production										
E. Production of Halocarbons and SF ₆										
F. Consumption of Halocarbons and SF ₆										
G. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3. Solvent and Other Product Use	0,69	0,68	0,68	0,67	0,66	0,65	0,64	0,64	0,64	0,63
4. Agriculture	18,61	18,41	18,20	18,27	18,31	18,64	18,15	18,13	18,21	18,33
A. Enteric Fermentation										
B. Manure Management	3,10	3,09	3,06	3,13	3,15	3,20	3,19	3,18	3,15	3,17
C. Rice Cultivation										

2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Change from base to latest reported year
(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	%
2,49	2,48	2,42	2,49	2,47	2,02	1,95	2,06	2,13	2,17	2,18	2,13	0,77
2,49	2,48	2,42	2,49	2,47	2,02	1,95	2,06	2,13	2,17	2,18	2,13	0,77
0,69	0,67	0,66	0,71	0,68	0,43	0,40	0,40	0,38	0,52	0,48	0,49	-18,01
0,34	0,34	0,34	0,34	0,35	0,36	0,38	0,51	0,49	0,42	0,55	0,51	50,83
1,13	1,12	1,09	1,09	1,08	0,89	0,83	0,83	0,92	0,89	0,81	0,82	-1,94
0,33	0,35	0,33	0,35	0,35	0,35	0,33	0,32	0,34	0,33	0,34	0,30	-8,92
0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	-64,71
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	IE,NA,NO	IE,NA,NO	0,00
NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0,00
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	IE,NA,NO	IE,NA,NO	0,00
14,76	14,21	12,86	10,38	10,99	11,03	8,31	6,19	6,20	6,54	8,37	4,52	-64,50
NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	0,00
14,76	14,21	12,86	10,38	10,99	11,03	8,31	6,19	6,20	6,54	8,37	4,52	-64,50
NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0,00
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0,00
0,69	0,69	0,69	0,69	0,69	0,69	0,68	0,68	0,68	0,68	0,68	0,68	-1,07
16,75	16,51	16,32	15,31	15,35	14,88	14,60	14,47	14,12	14,40	14,47	14,51	-22,05
2,88	2,86	2,76	2,62	2,62	2,57	2,51	2,49	2,49	2,50	2,53	2,48	-19,93

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year (1990)	1991	1992	1993	1994	1995	1996	1997	1998	1999
	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)
D. Agricultural Soils	15,51	15,31	15,13	15,14	15,16	15,44	14,96	14,95	15,06	15,16
E. Prescribed Burning of Savannas	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
F. Field Burning of Agricultural Residues	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
G. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5. Land Use, Land-Use Change and Forestry	0,04	0,06	0,07	0,08	0,09	0,09	0,85	0,13	0,14	0,14
A. Forest Land	0,02	0,02	0,01	0,01	0,01	0,00	0,74	0,01	0,01	0,00
B. Cropland	0,03	0,04	0,05	0,07	0,08	0,09	0,10	0,12	0,13	0,14
C. Grassland	NE,NO	NE,NO	NE,NO	0,01	0,00	NE,NO	0,00	0,00	0,00	0,00
D. Wetlands	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,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	0,96	0,97	0,99	1,00	0,97	0,96	0,96	0,96	0,97	0,99
A. Solid Waste Disposal on Land										
B. Waste-water Handling	0,95	0,96	0,98	0,99	0,96	0,96	0,95	0,95	0,97	0,99
C. Waste Incineration	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,00	0,00
D. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7. Other (as specified in Summary 1.A)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Total N₂O emissions including N₂O from LULUCF	35,13	34,73	33,56	34,52	36,34	37,90	39,80	38,04	38,48	38,15
Total N₂O emissions excluding N₂O from LULUCF	35,09	34,68	33,49	34,44	36,25	37,81	38,94	37,92	38,34	38,00
Memo Items:										
International Bunkers	0,03	0,03	0,03	0,03	0,03	0,03	0,03	0,04	0,04	0,04

2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Change from base to latest reported year
(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	%
13,88	13,65	13,56	12,69	12,73	12,31	12,09	11,97	11,64	11,90	11,94	12,02	-22,47
NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0,00
NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0,00
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0,00
0,15	0,17	0,19	0,20	0,20	0,21	0,23	0,25	0,26	0,28	0,30	0,53	1.142,02
0,00	0,00	0,01	0,00	NE,NO	0,00	0,00	0,00	NE,NO	NE,NO	NE,NO	0,09	466,67
0,15	0,17	0,18	0,19	0,20	0,21	0,23	0,24	0,26	0,28	0,30	0,32	1.105,24
0,00	NE,NO	NE,NO	0,00	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	0,12	100,00
NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	0,00
NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0,00
NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0,00
NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0,00
0,91	0,96	0,94	0,93	0,94	0,94	0,94	0,94	0,95	0,95	0,96	0,97	1,35
0,90	0,95	0,93	0,93	0,94	0,93	0,94	0,94	0,95	0,95	0,96	0,97	2,28
0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	-97,83
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0,00
NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0,00
35,76	35,01	33,41	30,00	30,63	29,76	26,70	24,59	24,35	25,03	26,98	23,33	-33,59
35,60	34,85	33,23	29,80	30,42	29,55	26,47	24,34	24,08	24,75	26,67	22,80	-35,02
0,04	0,05	0,05	0,05	0,05	0,05	0,05	0,06	0,06	0,06	0,07	0,08	130,66

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year (1990)	1991	1992	1993	1994	1995	1996	1997	1998	1999
	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)
Aviation	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,02	0,02
Marine	0,03	0,03	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,03
Multilateral Operations	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CO₂ Emissions from Biomass										

Emission trends (HFCs, PFCs and SF₆)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year (1990)	1991	1992	1993	1994	1995	1996	1997	1998	1999
	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)
Emissions of HFCs⁽³⁾ - (Gg CO₂ equivalent)	NA,NO	NA,NO	444,52	444,52	450,96	451,73	539,50	650,20	786,17	814,96
HFC-23	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO
HFC-32	NA,NO	NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,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	NA,NO
HFC-43-10mee	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO
HFC-125	NA,NO	NA,NO	IE,NA,NO	IE,NA,NO	0,00	0,00	0,00	0,01	0,02	0,03
HFC-134	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO
HFC-134a	NA,NO	NA,NO	0,34	0,34	0,34	0,34	0,39	0,45	0,49	0,45
HFC-152a	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	0,00	0,00	0,00	0,01	0,03
HFC-143	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO
HFC-143a	NA,NO	NA,NO	IE,NA,NO	IE,NA,NO	0,00	0,00	0,00	0,01	0,02	0,03
HFC-227ea	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	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

2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Change from base to latest reported year
(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	%
0,02	0,02	0,02	0,03	0,03	0,02	0,03	0,03	0,04	0,04	0,05	0,05	612,55
0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,02	-8,61
NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0,00

2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Change from base to latest reported year
(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	%
943,28	1.071,31	1.290,07	1.442,09	1.479,48	1.461,82	1.559,19	1.738,90	1.821,60	1.882,52	1.936,25	1.996,06	100,00
NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	0,00	0,00	0,00	0,00	0,00	0,00	0,00	100,00
0,00	0,00	0,01	0,01	0,01	0,01	0,02	0,02	0,02	0,03	0,03	0,03	100,00
NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	0,00
NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	0,00
0,04	0,06	0,07	0,09	0,10	0,11	0,12	0,14	0,15	0,16	0,16	0,17	100,00
NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	0,00
0,47	0,51	0,56	0,60	0,58	0,53	0,55	0,61	0,62	0,63	0,64	0,66	100,00
0,11	0,07	0,38	0,33	0,29	0,21	0,21	0,30	0,32	0,33	0,35	0,32	100,00
NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	0,00
0,05	0,06	0,08	0,09	0,10	0,11	0,12	0,13	0,14	0,15	0,15	0,15	100,00
0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	100,00
NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	0,00
NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	0,00

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year (1990)	1991	1992	1993	1994	1995	1996	1997	1998	1999
	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)
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 PFCs⁽³⁾ - (Gg CO₂ equivalent)	1.753,32	1.677,72	1.829,52	1.758,67	2.113,04	2.335,24	2.217,41	1.211,43	669,33	347,97
CF ₄	0,05	0,05	0,05	0,05	0,06	0,07	0,07	0,02	0,00	0,00
C ₂ F ₆	0,06	0,05	0,06	0,05	0,07	0,07	0,07	0,04	0,02	NA,NO
C ₃ F ₈	0,02	0,02	0,03	0,02	0,03	0,03	0,03	0,03	0,01	NA,NO
C ₄ F ₁₀	0,03	0,03	0,03	0,03	0,03	0,04	0,04	0,02	0,01	0,00
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 ₅ F ₁₂	0,04	0,04	0,05	0,04	0,06	0,06	0,06	0,02	0,03	0,02
C ₆ F ₁₄	0,03	0,03	0,03	0,03	0,03	0,03	0,03	0,02	0,02	0,02
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)	1.662,49	1.576,25	1.743,82	1.676,56	2.035,35	2.205,16	2.120,86	526,39	271,44	116,09
SF ₆	0,07	0,07	0,07	0,07	0,09	0,09	0,09	0,02	0,01	0,00

2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Change from base to latest reported year
(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	%
NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	0,00
360,90	222,60	82,22	208,79	307,36	154,27	158,80	180,47	201,87	115,78	85,44	178,99	-89,79
0,00	0,00	0,00	0,00	0,01	0,00	0,00	0,00	0,00	0,00	0,00	0,00	-97,38
NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	0,00	0,00	0,00	0,00	0,00	0,00	0,00	-99,74
NA,NO	NA,NO	NA,NO	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	-98,72
0,00	NA,NO	NA,NO	0,00	0,01	0,01	0,01	0,01	0,00	0,00	0,00	0,02	-31,50
NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	0,00
0,03	0,01	0,01	0,00	0,01	0,00	0,00	0,00	0,00	0,00	0,00	0,00	-100,00
0,02	0,02	0,00	0,02	0,02	0,01	0,01	0,01	0,02	0,01	0,01	0,00	-87,15
NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	0,00
111,52	129,06	112,03	99,91	84,34	85,97	75,03	81,13	91,19	97,15	111,15	116,30	-93,00
0,00	0,01	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	-93,00

Emission trends : summary

GREENHOUSE GAS EMISSIONS	Base year (1990)	1991	1992	1993	1994	1995	1996	1997	1998	1999
	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)
CO ₂ emissions including net CO ₂ from LULUCF	118.169,09	120.900,26	119.065,69	118.139,01	122.599,05	123.681,14	127.911,50	122.012,87	128.358,77	122.803,84
CO ₂ emissions excluding net CO ₂ from LULUCF	119.096,48	121.554,17	120.016,32	119.019,31	123.505,12	124.427,72	128.458,10	122.827,25	129.071,08	123.552,02
CH ₄ emissions including CH ₄ from LULUCF	9.831,94	9.649,95	9.506,24	9.412,95	9.381,63	9.414,20	9.194,89	9.039,95	8.899,21	8.768,60
CH ₄ emissions excluding CH ₄ from LULUCF	9.831,46	9.649,46	9.505,83	9.412,47	9.381,23	9.414,18	9.172,02	9.039,71	8.898,84	8.768,52
N ₂ O emissions including N ₂ O from LULUCF	10.889,94	10.767,73	10.404,11	10.701,43	11.266,20	11.749,37	12.337,30	11.792,63	11.928,97	11.825,27
N ₂ O emissions excluding N ₂ O from LULUCF	10.876,74	10.750,39	10.383,44	10.676,02	11.237,60	11.720,56	12.072,73	11.753,79	11.884,99	11.780,43
HFCs	NA,NO	NA,NO	444,52	444,52	450,96	451,73	539,50	650,20	786,17	814,96
PFCs	1.753,32	1.677,72	1.829,52	1.758,67	2.113,04	2.335,24	2.217,41	1.211,43	669,33	347,97
SF ₆	1.662,49	1.576,25	1.743,82	1.676,56	2.035,35	2.205,16	2.120,86	526,39	271,44	116,09
Total (including LULUCF)	142.306,78	144.571,91	142.993,90	142.133,14	147.846,24	149.836,83	154.321,46	145.233,46	150.913,89	144.676,73
Total (excluding LULUCF)	143.220,48	145.207,99	143.923,45	142.987,56	148.723,30	150.554,59	154.580,63	146.008,77	151.581,86	145.379,99

2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Change from base to latest reported year
CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	(%)
124.526,45	124.318,90	123.577,83	126.713,25	127.528,91	124.257,23	120.480,35	116.133,62	119.231,04	106.848,85	113.426,83	103.033,59	-12,81
125.256,16	125.227,83	124.977,60	128.167,27	128.870,46	125.617,23	121.805,45	117.442,49	120.537,51	108.257,72	114.878,25	104.472,11	-12,28
8.432,58	8.094,71	7.674,81	7.206,39	7.134,32	6.933,03	6.842,18	6.825,09	6.668,24	6.582,81	6.641,39	6.482,76	-34,06
8.432,58	8.094,69	7.674,59	7.206,25	7.134,32	6.933,03	6.842,17	6.825,06	6.668,24	6.582,81	6.641,39	6.476,50	-34,12
11.084,31	10.854,23	10.357,48	9.298,67	9.494,38	9.226,92	8.276,91	7.621,63	7.547,14	7.759,05	8.362,38	7.232,05	-33,59
11.036,40	10.802,32	10.299,85	9.238,20	9.431,62	9.160,52	8.206,89	7.545,67	7.465,32	7.671,04	8.268,19	7.068,14	-35,02
943,28	1.071,31	1.290,07	1.442,09	1.479,48	1.461,82	1.559,19	1.738,90	1.821,60	1.882,52	1.936,25	1.996,06	100,00
360,90	222,60	82,22	208,79	307,36	154,27	158,80	180,47	201,87	115,78	85,44	178,99	-89,79
111,52	129,06	112,03	99,91	84,34	85,97	75,03	81,13	91,19	97,15	111,15	116,30	-93,00
145.459,05	144.690,81	143.094,43	144.969,10	146.028,78	142.119,25	137.392,45	132.580,84	135.561,08	123.286,16	130.563,45	119.039,75	-16,35
146.140,84	145.547,81	144.436,35	146.362,52	147.307,57	143.412,85	138.647,53	133.813,72	136.785,73	124.607,03	131.920,68	120.308,10	-16,00

GREENHOUSE GAS EMISSIONS	Base year (1990)	1991	1992	1993	1994	1995	1996	1997	1998	1999
	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)
1. Energy	112.375,42	115.174,16	113.663,59	112.732,66	115.918,10	116.461,41	121.251,38	115.197,31	121.371,38	115.550,79
2. Industrial Processes	15.778,52	15.104,69	15.383,30	15.475,53	18.020,58	19.229,18	18.860,04	16.392,04	15.903,83	15.557,16
3. Solvent and Other Product Use	213,41	210,34	209,27	207,23	204,46	200,18	199,42	198,84	197,74	196,51
4. Agriculture	11.440,21	11.307,78	11.229,23	11.345,12	11.345,40	11.531,62	11.303,30	11.261,80	11.287,73	11.355,36
5. Land Use, Land-Use Change and Forestry ⁽⁵⁾	-913,71	-636,09	-929,54	-854,42	-877,06	-717,76	-259,17	-775,31	-667,96	-703,26
6. Waste	3.412,92	3.411,02	3.438,06	3.227,03	3.234,76	3.132,19	2.966,48	2.958,78	2.821,18	2.720,17
7. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Total (including LULUCF) ⁽⁵⁾	142.306,78	144.571,91	142.993,90	142.133,14	147.846,24	149.836,83	154.321,46	145.233,46	150.913,89	144.676,73

Source: Data extracted from the November 2013 Belgian inventory re-submission (v.1.6).

2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Change from base to latest reported year
CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	CO ₂ equivalent (Gg)	(%)
116.993,79	117.510,84	116.155,73	119.397,57	119.786,48	116.235,48	112.411,44	108.102,13	111.417,63	101.934,63	108.155,67	97.698,27	-13,06
15.664,55	14.939,84	15.371,66	14.788,10	15.365,02	15.327,00	14.547,19	13.961,08	13.893,53	11.235,53	12.224,79	11.288,60	-28,46
213,52	213,36	212,88	212,73	212,70	212,36	211,96	212,12	212,00	211,58	211,20	211,13	-1,07
10.671,68	10.549,63	10.321,93	9.841,80	9.798,73	9.586,85	9.462,08	9.534,21	9.394,44	9.494,66	9.560,48	9.496,92	-16,99
-681,79	-857,00	-1.341,92	-1.393,42	-1.278,79	-1.293,60	-1.255,08	-1.232,88	-1.224,65	-1.320,86	-1.357,23	-1.268,35	38,81
2.597,30	2.334,14	2.374,15	2.122,33	2.144,64	2.051,16	2.014,86	2.004,19	1.868,12	1.730,62	1.768,53	1.613,18	-52,73
NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0,00
145.459,05	144.690,81	143.094,43	144.969,10	146.028,78	142.119,25	137.392,45	132.580,84	135.561,08	123.286,16	130.563,45	119.039,75	-16,35

2.2 National inventory arrangements

2.2.1 Summary information on national inventory arrangements

The Belgian GHG inventory is the direct sum of regional emission data because environment falls mainly under the competence of the three Regions of Belgium (Walloon Region, Flemish Region and Brussels-Capital Region). *The Belgian Interregional Environmental Agency (IR-CEL-CELINE) [...] operates as national compiler of greenhouse gas emissions. [...] It is responsible for collecting the regional estimates of GHG emissions / removals and for compiling the three sets of regional data into one national inventory.* The National Climate Commission is the entity responsible for the approval of the Belgian national inventory report.

The main institutions involved in the compilation of the Belgian GHG inventory are:

- the Working group on Emissions under the Coordination Committee for International Environmental Policy (CCIEP) which plays a central role in the coordination of the national GHG inventory,

- the National Climate Commission which is in charge of the approval of the inventory reports,
- the Directorate General Energy of the Federal Public Service Economy, SMEs, Self-employed and Energy (FPS - DG Energy) which is responsible for the top-down estimation of energy-related CO₂ emissions using the IPCC “reference approach” on the basis of the national energy balance,
- the climate change section within the Directorate General Environment of the Federal Public Service for Health, Food Chain Safety and the Environment (FPS - DG Environment) which is involved in the national inventory system in its capacity of UNFCCC National Focal Point of Belgium, as a coordinator for the national reports.

and, of course, the 3 regional agencies which are responsible for delivering their greenhouse gas inventories:

- *the Flemish Environment Agency (VMM) in the Flemish Region,*
- *the Walloon Agency for Air and Climate (AWAC) in the Walloon Region,*

- *the Brussels Institute for the Management of the Environment (Brussels Environment - IBGE/BIM) in the Brussels Capital Region.*

The CCIEP is the principal organ for coordinating international environmental policy.[...] All technical aspects of the GHG inventory (methodological choices, emission factors, uncertainty analysis, QA/QC, etc.), as well as organizational aspects of the preparation process, are coordinated via the working group under this body. Beside the CRF-submissions, other reporting requirements such as the National Inventory Report and responses to the review processes are also prepared within this working group. The CCIEP-WG Emissions is also the forum for the process of improvement of the national inventory system. [NC6 - 3.3.2.2 Institutions and procedures – page 53]

More detailed information is given in section 1.1 of the National Inventory Report.

2.2.2 Summary information on changes to national inventory arrangements since the last National Communication or Biennial Report

In June 2012, the Belgian registry -as well as all other European registries- was migrated towards the Consolidated System of European Registries (CSEUR) developed on request of the European Commission (EC).

The EC is in charge of the hosting, development and maintenance of the CSEUR. The Belgian Registry Administrator remains responsible for the administration of the Belgian KP registry and for the accounts in the Union Registry under Belgian jurisdiction (both are included in the CSEUR).

More detailed information is given in section 3.4 of the 6th Belgian National Communication.

3. Quantified economy-wide emission reduction target

3.1 EU target

The European Union and its member States communicated their quantified economy-wide emission reduction targets in document FCCC/SB/2011/INF.1/Rev.1. and FCCC/AWGLCA/2012/MISC.1

FCCC/SB/2011/INF.1/Rev.1

European Union and its member States

The EU and its member States communicated an independent quantified economy-wide emission reduction target of a 20 per cent emission reduction by 2020 compared with 1990 levels. Under the conditions set out by the European Council of December 2009 and as part of a global and comprehensive agreement for the period beyond 2012, the EU reiterated its conditional offer to move to a 30 per cent emission reduction by 2020 compared with 1990 levels, provided that other developed countries commit themselves to comparable emission reductions and that developing countries contribute adequately according to their responsibilities and respective capabilities.

The EU and its 27 member States wished to reconfirm their commitment to a negotiating process aimed at achieving the strategic objective of limiting the increase in global average temperature to below 2 °C above pre-industrial levels. Meeting that objective requires the level of global GHG emissions to peak by 2020 at the latest, to be reduced by at least 50 per cent compared with 1990 levels by 2050 and to continue to decline thereafter. To this end, and in accordance with the findings of the Intergovernmental Panel on Climate Change, developed countries as a group should reduce their GHG emissions to below 1990 levels through domestic and complementary international efforts by 25 to 40 per cent by 2020 and by 80 to 95 per cent by 2050, while developing countries as a group should achieve a substantial deviation

below the currently predicted rate of growth in emissions, in the order of 15 to 30 per cent by 2020. The EU and its 27 member States are fully committed to continuing to negotiate with the other Parties, with a view to concluding as soon as possible within the United Nations framework a legally binding international agreement for the period commencing 1 January 2013.

The EU and its 27 member States wished to recall that the EU climate and energy package has already been adopted.⁵ Among other things, this package consolidates the European Union emissions trading scheme (EU ETS) and expands its scope. In addition, pursuant to the EU “effort-sharing decision”, member States are required to implement additional policies and measures concerning the GHG emissions from sources not falling under the EU ETS, in order to reach the overall EU emission reduction target.

The European Union and 27 member states target of a 20% reduction on 1990 levels (the international reference year) was converted to a target of a 14% reduction on 2005 levels. 2005 was the first year in which the ETS regulations were in force, and hence the first year for which Europe had sufficient data to make the classification.

The European target reduction of 14% from 2005 levels was subdivided as follows [through the climate and energy package]:

- *A target reduction of 21% from 2005 levels for all businesses that are covered by the EU ETS.*
- *A target reduction of 10% from 2005 levels for all sectors that are not covered by the EU ETS.*

The second target (10% reduction) relates primarily to the transport, (residential and tertiary) building, waste and agricultural sectors and, to a lesser extent, to some of the energy and industrial sectors that are not covered by the ETS. This target was allocated among 27 member states in the Effort-sharing Decision or ESD (Decision No 406/2009/EC).

The allocation of the European 20% target for reductions in greenhouse gas emissions is shown in figure 4.1 of NC6.

[see page 61 of NC6 – 4.1.3 The European framework]

3.2 BE target

Under the climate and energy package, the Belgian target is a reduction of its greenhouse gas emissions in non-ETS sectors by 15% between 2005 and 2020 with annual reduction targets. In addition, the share of renewables in final energy demand in Belgium shall reach 13% by 2020. It is also required to improve the energy efficiency of activities on its territory.²

[see page 61 of NC6]

² For the period 2008-2012, Belgium is committed to reduce its global emissions by 7.5%, in the context of the European Union’s commitment under the Kyoto Protocol to reduce global greenhouse gas emissions by 8% between 2008 and 2012. Since GHG inventory data correspond to year x-2, the present report will also include information that is still relevant for this 1st commitment period.

3.3 Market-based mechanisms under the Convention

Decision No 406/2009/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up

to 2020 allows Certified Emission Reductions (CERs) and Emission Reduction Units (ERUs) to be used for compliance purposes, subject to a number of restrictions in terms of origin and type of project and up to an established limit. In

addition, the legislation foresees the possible recognition of units from new market mechanisms. Under the EU ETS the limit does not exceed 50% of the required reduction below 2005 levels. In the sectors not covered by the ETS, annual use shall not exceed to 3 % of each Member State's non-ETS greenhouse gas emissions in 2005. According to art. 5 (5) of Decision 406/2009/EC (ESD) a limited number of Member States may use an additional 1%,

from projects in LDCs or SIDS subject to specific conditions. Belgium benefits of the use of this additional 1% as listed in Annex III of the decision.

The AAUs for the period 2013-2020 has not yet been determined. This will be done on the basis of the report to facilitate the calculation of the assigned amount that Belgium will submit to the UNFCCC secretariat by 15 April 2015 pursuant to Article 2 of Decision 2/CMP8.

CTF Table 2. Description of quantified economy-wide emission reduction target

Emission reduction target : base year and target		Comments
Base year/ base period	1990	Whereas the base year of the EU and its Member States is 1990 for the purposes of the target as reflected in FCCC/SB/2011/INF.1/Rev.1, the information on QELROs by the EU and its Member States will reflect the flexibilities to set individual base years provided under the Kyoto Protocol. For Belgium the base year is 1990 for CO ₂ , N ₂ O and CH ₄ while it is 1995 for F-gases See FCCC/AWGLCA/2012/MISC.1
Emission reductions target (% of base year/ base period)		
Emission reductions target (% of 1990)	20	Joint target for the EU and 27 MS as referred to in document FCCC/SB/2011/INF.1/Rev.1
Period for reaching target	By 2020	Legally binding target trajectories for the period 2013-2020 are enshrined in both the EU-ETS and the ESD. These legally binding trajectories not only result in a 20% GHG reduction in 2020 compared to 1990 but also define the EU's target pathway to reduce EU GHG emissions from 2013 to 2020. [see FCCC/AWGLCA/2012/MISC.1]

Gases covered	Covered	Base Year	GWP reference source	Comments
CO ₂	Yes	1990	IPCC AR4	Whereas the base year of the EU and its Member States is 1990 for the purposes of the target as reflected in FCCC/SB/2011/INF.1/Rev.1, the information on QELROs by the EU and its Member States will reflect the flexibilities to set individual base years provided under the Kyoto Protocol. See FCCC/AWGLCA/2012/MISC.1 as adopted in UNFCCC reporting guidelines for national GHG inventories of Annex I Parties and as adopted under the EU Monitoring Mechanism Regulation
CH ₄	Yes	1990	IPCC AR4	Whereas the base year of the EU and its Member States is 1990 for the purposes of the target as reflected in FCCC/SB/2011/INF.1/Rev.1, the information on QELROs by the EU and its Member States will reflect the flexibilities to set individual base years provided under the Kyoto Protocol. See FCCC/AWGLCA/2012/MISC.1 as adopted in UNFCCC reporting guidelines for national GHG inventories of Annex I Parties and as adopted under the EU Monitoring Mechanism Regulation
N ₂ O	Yes	1990	IPCC AR4	Whereas the base year of the EU and its Member States is 1990 for the purposes of the target as reflected in FCCC/SB/2011/INF.1/Rev.1, the information on QELROs by the EU and its Member States will reflect the flexibilities to set individual base years provided under the Kyoto Protocol. See FCCC/AWGLCA/2012/MISC.1 as adopted in UNFCCC reporting guidelines for national GHG inventories of Annex I Parties and as adopted under the EU Monitoring Mechanism Regulation
HFCs	Yes	1995	IPCC AR4	Whereas the base year of the EU and its Member States is 1990 for the purposes of the target as reflected in FCCC/SB/2011/INF.1/Rev.1, the information on QELROs by the EU and its Member States will reflect the flexibilities to set individual base years provided under the Kyoto Protocol. See FCCC/AWGLCA/2012/MISC.1 as adopted in UNFCCC reporting guidelines for national GHG inventories of Annex I Parties and as adopted under the EU Monitoring Mechanism Regulation
PFCs	Yes	1995	IPCC AR4	Whereas the base year of the EU and its Member States is 1990 for the purposes of the target as reflected in FCCC/SB/2011/INF.1/Rev.1, the information on QELROs by the EU and its Member States will reflect the flexibilities to set individual base years provided under the Kyoto Protocol. See FCCC/AWGLCA/2012/MISC.1 as adopted in UNFCCC reporting guidelines for national GHG inventories of Annex I Parties and as adopted under the EU Monitoring Mechanism Regulation
SF ₆	Yes	1995	IPCC AR4	Whereas the base year of the EU and its Member States is 1990 for the purposes of the target as reflected in FCCC/SB/2011/INF.1/Rev.1, the information on QELROs by the EU and its Member States will reflect the flexibilities to set individual base years provided under the Kyoto Protocol. See FCCC/AWGLCA/2012/MISC.1 as adopted in UNFCCC reporting guidelines for national GHG inventories of Annex I Parties and as adopted under the EU Monitoring Mechanism Regulation

Gases covered	Covered	Base Year	GWP reference source	Comments
NF ₃	Yes	Not yet defined	IPCC AR4	Base year not defined yet
Other Specify				

Comments : The Global Warming Potentials used to aggregate EU GHG emissions up to 2020 under existing EU legislation are those based on the 4th Assessment Report of the Intergovernmental Panel of Climate Change (IPCC AR4), as adopted in decision 4.CMP.7 §5. Until the 2015 submission, IPCC AR2 GWP are in use.

Sectors covered	Covered	Comments
Energy	Yes	Emissions covered under EU pledge incl. fuel combustion activities, fugitive emissions from fuels, and CO ₂ transport and storage See FCCC/AWGLCA/2012/MISC.1
Transport	Yes	Emissions covered under EU pledge
Industrial processes	Yes	Emissions covered under EU pledge
Agriculture	Yes	Emissions covered under EU pledge
LULUCF	No	Emissions not covered under EU pledge See FCCC/AWGLCA/2012/MISC.1
Waste	Yes	Emissions covered under EU pledge
Other Specify		
Aviation	Partly	Emissions covered under EU pledge CO ₂ emissions from all flights falling within the aviation activities listed in Annex I of the EU ETS Directive which depart from an airport situated in the territory of a Member State and those which arrive in such an aerodrome from a third country, excluding small commercial emitters
Use of N ₂ O for Anaesthesia (CRF 3)		This sector is only mentioned here for technical reason i.e. adding this sector in table 6.
Fugitive emissions from fuels (CRF 1B)		This sector is only mentioned here for technical reason i.e. adding this sector in table 6.

Role of LULUCF sector		Comments
LULUCF in base year level and target	excluded	<p>The EU pledge does not include emissions/removals from Land Use, Land-Use Change and Forestry to deliver its firm independent commitment to reduce greenhouse gas emissions by at least 20 % compared to 1990 by 2020. The EU LULUCF sector is however estimated to be a net sink over that period.</p> <p>EU inventories do however include information on emissions from Land Use, Land Use Change and Forestry in accordance with relevant reporting commitments under the UNFCCC and the KP.</p> <p>To prepare a robust basis for addressing emissions/removals taking place in the LULUCF sectors in the future and building on decisions2/ CMP.7, Decision 529/2013/EC prepares the accounting of these emissions in the EU, and invites Member States to report on LULUCF Actions that will provide information on actions undertaken to reduce emissions, increase removals and protect carbon stocks in the sector. See FCCC/AWGLCA/2012/MISC.1</p> <p>This sector will be reported. Under the KP second CP, Belgium will report and account according to Decision 2/CMP7, on afforestation reforestation and deforestation under art 3.3. and on forest management under art 3.4. Forest management will be accounted using the Reference level approach, with the Reference level described in the appendix of Decision 2/CMP.7.</p>
Contribution of LULUCF is calculated using		<p>Under the KP Belgium uses the reference level approach for Forest management . The Belgian RL was based on projections, submitted to the UNFCCC in 2011 and subject to a technical assessment in 2011, as foreseen by decision 2/CMP.6. The final value is the appendix of Decision 2/CMP.7.</p>

Market-based mechanisms under the Convention		Comments
Possible scale of contributions of market-based mechanisms under the Convention (estimated kt CO ₂ eq)		Decision No 406/2009/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020 allows Certified Emission Reductions (CERs) and Emission Reduction Units (ERUs) to be used for compliance purposes, subject to a number of restrictions in terms of origin and type of project and up to an established limit. In addition, the legislation foresees the possible recognition of units from new market mechanisms. Under the EU ETS the limit does not exceed 50% of the required reduction below 2005 levels. In the sectors not covered by the ETS, annual use shall not exceed to 3 % of each Member State's non-ETS greenhouse gas emissions in 2005. According to art. 5 (5) of Decision 406/2009/EC (ESD) a limited number of Member States may use an additional 1%, from projects in LDCs or SIDS subject to specific conditions. Belgium benefits of the use of this additional 1% as listed in Annex III of the decision.
CERs		The exact number of units that can be used during the period 2013-2020 can only be determined following the availability of final data concerning the use of these units during the period 2008-2012 and relevant greenhouse gas emissions data. The use of these units under the ETS Directive and the Effort Sharing Decision is subject to the limits specified above which do not separate between CERs and ERUs, but include additional criteria for the use of CERs.
ERUs		The exact number of units that can be used during the period 2013-2020 can only be determined following the availability of final data concerning the use of these units during the period 2008-2012 and relevant greenhouse gas emissions data. The use of these units under the ETS Directive and the Effort Sharing Decision is subject to the limits specified above which do not separate between CERs and ERUs, but include additional criteria for the use of ERUs.
AAUs		AAUs for the period 2013-2020 have not yet been determined. The EU expects to achieve its 20% target for the period 2013-2020 with the implementation of the ETS Directive and the ESD Decision in the non-ETS sectors which do not allow the use of AAUs from non-EU Parties.
Carry-over units		The exact number of carry-over units for the EU and its Member States from the first commitment period that can be used for compliance during the period 2013-2020 can only be determined after the true-up period of the first commitment period. In the second commitment period the use of such units in the PPSR account depend on the extent by which emissions during the second commitment period exceed the assigned amount for that commitment period, which can only be determined at the end of the second commitment period. At CMP.9 the EU made a declaration when adopting the Doha amendment of the Kyoto Protocol that the European Union legislation on Climate-Energy Package for the implementation of its emission reduction objectives for the period 2013-2020 does not allow the use of surplus AAUs carried over from the first commitment period to meet these objectives.
Other mechanism units under the Convention (specify)		Article 5 (2) of Decision 406/2009/EC allow for the use of such units provided that the necessary legal arrangements for the creation of such units have been put in place in the EU which is not the case at the point in time of the provision of this report.

Other market-based mechanisms		Comments
Possible scale of contributions of other market-based mechanisms (estimated kt CO ₂ eq)		Not applicable. Belgium does not recognize the use of market-based mechanisms other than those under the Convention for the achievements of quantified economy-wide emission reduction targets.

Any other information		
Any other information	In December 2009, the European Council reiterated the conditional offer of the EU to move to a 30% reduction by 2020 compared to 1990 levels as part of a global and comprehensive agreement for the period beyond 2012, provided that other developed countries commit themselves to comparable emission reductions and that developing countries contribute adequately according to their responsibilities and respective capabilities.	

4. Progress towards the achievement of quantified economy-wide emission reduction targets

4.1 Mitigation actions and their effects

In the Belgian federal system, policies and measures aiming at reducing greenhouse gas emissions are developed at different tiers of governance, according to the distribution of competences between the Federal Government and the Regions. Various coordination bodies have been set up to harmonise the policies pursued by the Federal Government and the three Regions, ensuring that they complement each other. The National Climate Commission is one such body, and is responsible for developing and coordinating the implementation of climate policy at different levels.

[see page 7 of NC6 – executive summary]

To work towards its first Kyoto target, Belgium has shared the burden between its 3 Regions and the Federal Government, each establishing its own emissions reduction policy according to its individual competences. The result of consolidating these various policies is the National Climate Plan, applied between 2009 and 2012 and now almost completed. Since 2013, the National Climate Commission has been engaged in extending this Plan up to 2020, and the regional authorities are in the process of defining their own policies. However, the burden sharing resulting from Belgium's contribution to the

European climate and energy package is not yet finalised.³

The climate policies of the different Belgian authorities focus on six sectoral strategic priorities: optimising energy production, the rational use of energy in buildings, making an impact on industrial processes, developing sustainable modes of transport, fostering the sustainable management of agricultural and forest ecosystems and strengthening efforts in waste management. There are also complementary, crosscutting priorities such as support for research and development, awareness raising and training of the various target groups, strengthening the government's role in setting an example, implementing flexibility mechanisms and incorporating climate matters into development aid policy.

³ Situation as at autumn 2013.

Energy

The two main climate policy tools in the electricity generation and energy conversion sectors are:

- Firstly, application of the ETS system aimed at reducing greenhouse gas emissions
- Secondly, the green certificate (as well as “cogeneration” certificates in the Flemish Region) to promote electricity generation using renewable energy sources and high-efficiency cogeneration. These are supplemented by financial support (subsidies, grants and tax abatements) for investments in these generation facilities.

Buildings

Measures to promote rational energy use and the use of renewable energy sources in buildings focus on transposing the European Directives concerning energy performance of buildings and improving energy efficiency. These tools provide a timetable for the entry into force of increasingly stringent energy standards for new constructions and thorough renovations, including heating and hot water production facilities and financial support for upgrading the energy efficiency of existing buildings.

Mandatory preparation of an energy certificate for any building prior to a transaction (sale, rental) should offer, in the medium and long term, a way of attributing added value to the most efficient buildings.

The Federal Government has chosen to improve its own building stock through a third-party investor.

Industry

In industry, the ETS system is a major tool for reducing greenhouse gas emissions in the most cost-efficient way. A second crucial tool is the sectoral agreements drawn up between the regional governments and their industries to improve energy efficiency and reduce greenhouse gas emissions. These agreements also pave the way for opportunities to use renewable energy sources and develop “CO₂ mapping” of the activity of industrial sites or commodity chains.

Transport

In the transport sector, the initiatives undertaken by the federal and regional governments mainly focus on:

Limiting road traffic growth and incentivising the “modal shift” (towards rail or waterways) by improving public transport and upgrading infrastructure.

Encouraging drivers to acquire and use low-energy vehicles (information, tax incentives) and to optimize their use (eco-driving, car-sharing, ...).

Agriculture and forestry

Initiatives in the agricultural sector primarily focus on reducing greenhouse gas emissions by improving agricultural practices (processing, storage and spreading of manure, waste recovery, combating soil degradation, etc.). Reforestation and forest conservation are encouraged through specific legislation.

Waste

The policies implemented to reduce the volume of waste and optimise its treatment are based on environmental taxation (promoting reusable packaging), stricter regulations (ban on landfill, mandatory treatment of landfill gases, standards for incinerators) and the development of specific channels for waste recovery and treatment.

[see page 7 of NC6 – executive summary]

The National Climate Plan contains around 100 measures but only the main ones are reviewed here. Research, training/education and development aid measures are covered in the other chapters of this 6th National Communication.

The measures are firstly grouped by area. Then they are classified in groups or clusters according to their complementarities, either they have the same target or their impact is on the same sources of emissions. Table A presents these various clusters broken down according to the fields of action, with the latter corresponding to the main areas referred to above. [see page 67 of NC6 – 4.3.2 Review of the main PAMs]

Table A. National Climate Plan: fields of interest (strategic areas) and clusters of measures

Areas		Clusters of measures	
EP	Energy production and conversion	EP-A	Promotion of environmentally-friendly energy production
		EP-B	Maximisation of energy efficiency of electricity generation
EC	Energy conservation in buildings	EC-A	Horizontal measures
		EC-B	Measures in the residential sector
		EC-C	Measures in the tertiary sector
IP	Industrial processes	IP-A	Energy efficiency in industry
		IP-B	Action concerning fluorinated gases
		IP-C	Action concerning industrial emissions of N ₂ O
TR	Transport	TR-A	Promotion of intermodal means of transport
		TR-B	Boosting of transport efficiency
		TR-C	Promotion of more ecological vehicles
		TR-D	Promotion of biofuels
AG	Agriculture	AG-A	Rational use of energy in agriculture
		AG-B	Limit on emissions of CH ₄ and N ₂ O
		AG-C	Maintaining the carbon storage potential in forests
		AG-D	Production of biomass for energy purposes
		AG-E	Horizontal measures
WA	Waste	WA-A	Limits on waste production at source
		WA-B	Waste-to-energy projects
		WA-C	Recovery of waste gases
		WA-D	Composition of biomass flows
		WA-E	Reduction in fluorinated gas emissions
SE	Raising awareness of climate change	SE-A	Horizontal measures
		SE-B	Raising awareness of the rational use of energy in buildings
		SE-C	Raising awareness of industrial environments
		SE-D	Raising awareness of sustainable mobility
		SE-E	Awareness-raising measures based on sustainable agriculture and forestry
OB	Public service obligations	OB-A	Horizontal measures
		OB-B	Promotion of the rational use of energy in buildings
		OB-C	Sustainable mobility

Policies up to 2020

Currently, Belgium's commitments by 2020 under the European Union's Effort Sharing Decision are subject to an internal burden sharing between the three Belgian Regions and the Federal Government. Discussions on this matter are ongoing.

In the meantime, the government of the Flemish Region adopted the final version of its 'Flemish Climate Policy Plan 2013-2020' on 28 June 2013. This plan covers the economic sectors covered by the European Union's Effort Sharing Decision.

The government of the Walloon Region is drawing up the legal framework which should enable it to formulate a climate plan by 2020. This 'Climate' Decree should define a path for transition towards a low-carbon society by 2050, establishing 'carbon budgets' spread over 5-year periods. The Climate Plan is under preparation and would be the instrument for the implementation of the path for the first stage up to 2020.

The government of the Brussels Capital Region has already adopted a legal

framework opening the way to the preparation of a set of policies and measures: on 2 May 2013, it adopted its Brussels Air-Climate-Energy Code (known as CO-BRACE)⁴[1] which integrates all the policies of the Region impacting on climate, air quality and energy management. It includes measures in these fields and serves as a legal basis for its Integrated Air-Climate-Energy Plan which is in the process of adoption. This plan will set the guidelines and measures to be taken in order to achieve the targets laid down by CO-BRACE, in accordance with the European Union policy and international law on air, climate and energy. As an urban region, the Brussels Region has also signed the Covenant of Mayors, setting itself the objective of a 30% reduction in its emissions between 1990 and 2025.

Finally, the Federal Authority will develop its own climate strategy as soon as the internal burden sharing is completed at the Belgian level.

[see page 66 of NC6 – 4.3.1 The National Climate Plan and regional policies up to 2020]

4.1.1 Impact of mitigation measures on emissions

CTF Table 3 and Annex 3 of [the] National Communication provide a detailed overview of each measure and, where possible, provides estimates of the impact of these measures on greenhouse gas emissions.

A reference code is assigned to each measure. This code consists of 2 letters to identify the field of application, a third letter identifying the cluster to which the measure belongs, followed by two digits. For example, measure TR-A01 deals with mobility plans for company employees. It applies to the field of 'transport' (TR) and appears in cluster A 'Promotion of inter-modal means of transport'. These references are shown in the text for the convenience of readers.

The structure of the main areas contained in the NCP has been slightly altered here in order to highlight the most salient facts. Accordingly, measures linked to the public authorities leading by example have been allocated to the different corresponding areas.

[see pages 67-68 of NC6 – 4.3.2 Review of the main PAMs]

⁴ Order of 2 May 2013 on the Brussels Air, Climate and Energy Management Code, Moniteur Belge, 21 May 2013, p. 28357.

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

Name of mitigation action	Included in with measures GHG projection scenario	Sector(s) affected	GHG(s) affected	Objective and/or activity affected	Type of instrument	Status of implementation	Brief description	Start year of implementation	Implementing entity or entities	Mitigation impact
										Estimate of mitigation impact (kt CO ₂ eq)
										2020
EP-A01 : Green and/or CHP certificates	Yes	Energy production	CO ₂	<p>Increase profitability of electricity production from RES and CHP</p> <p>Flemish Region (authority : VREG) :</p> <p>Green certificates and CGP certificates are separate instruments</p> <p>1/ The share of electricity supplies covered by RES should reach 6% by 2010 and 13% by 2020</p> <p>2/ The share covered by CHP should be 19% in 2010 (and a higher share by 2020)</p> <p>Walloon Region (authority CwAPE) :</p> <p>Both high efficiency CHP and RES electricity productions generate green certificates.</p> <p>26,7% of electricity supplies should be covered by 2015, 37,9% by 2020, yielding 8000 GWh of electricity from RES.</p>	Economic	implemented	<p>Principle of a system of green certificates : 1. A green certificate is allocated to a producer of green electricity every time its production avoids the emission of a fixed amount of CO₂, if it had to be produced in a reference fossil fuel plant (natural gas CCGT). 2. Each year, a predefined (and annually increasing) percentage of electricity supplied to end users has to be covered by green electricity. Suppliers must reconstitute the necessary number of green certificates to demonstrate that they respect that rule. In case of failure, a penalty fee is due. This situation creates a market for green certificates for the benefit of green electricity producers. In Flanders, a similar process is established for CHP, while CHP is integrated in the green certificates system in Brussels and Wallonia. Green certificates and CHP certificates : share of electricity sales to be covered by RES and/or high efficiency CHP. Guaranteed minimum income for suppliers of green energy. Shares are regularly updated by regional regulation authorities.</p>	2004	<p>FED : Economy, SMEs, Self-Employed and Energy FPS - DG Energy (E2)</p> <p>Flanders: VEA, VREG</p> <p>Wallonia: CwAPE</p> <p>Brussels: IBGE, Brugel</p>	10 947

Name of mitigation action	Included in with measures GHG projection scenario	Sector(s) affected	GHG(s) affected	Objective and/or activity affected	Type of instrument	Status of implementation	Brief description	Start year of implementation	Implementing entity or entities	Mitigation impact Estimate of mitigation impact (kt CO ₂ eq)
										2020
EP-A02 : Support for electricity production from RES	Yes	Energy production	CO ₂	Increase profitability of electricity production from RES and CHP	Fiscal	implemented	Financial support for electricity generation from RES through subsidies	2004	FED : Economy, SMEs, Self-Employed and Energy FPS - DG Energy (E2) Flanders: VEA, VREG Wallonia : DG04 Energy & DG06 Economy Brussels: IBGE, Sibelga	Impact included in EP-A01
EP-A03 : End of tax exemption on coal and heavy fuel	Yes	Energy production	CO ₂	Discourage the use of coal and heavy fuel in power plants	Information	implemented	Exemption from excise has been suppressed & an excise duty on energy for coal and heavy fuel oil products has been established Act of 07/12/2006 amending the excise duty rate for certain energy products (Published in 29/12/2006)	2004	FED : Finance FPS	Impact included in EP-A01
EP-A04 : Facilitators services for RES and CHP promotion	Yes	Energy production	CO ₂	Promotion of RES and high efficiency CHP	Information	implemented	Facilitators perform promotional actions and provide guidance and technical support to projects holders. They also identify technical and non technical barriers and formulate proposals to lift them. Facilitators exist for each RES technology (windmills, biomethanisation, wood energy, biofuels, mini hydro-electricity, PV electricity, ... as well as for CHP	2004	Flanders: VEA Brussels: IBGE Wallonia : DG04 Energy	Impact included in EP-A01
EP-A05 : Action plan for RES and CHP	Yes	Energy production	CO ₂	Development of biomass/off-shore wind energy /CHP	Economic	implemented	Action Plan for renewable energy and CHP. This PaM gathers various plans to promote electricity from RES. The major plan is the development of a large offshore wind farm in the North Sea, aiming at a total capacity of 2 200 MW (recently reviewed from 2 000 MW). Other plans concern notably on-shore windfarms and CHP	2004	FED : Economy, SMEs, Self-Employed and Energy FPS - DG Energy (E2) Flanders : VEA Wallonia : DGO4 Energy	2 356

Name of mitigation action	Included in with measures GHG projection scenario	Sector(s) affected	GHG(s) affected	Objective and/or activity affected	Type of instrument	Status of implementation	Brief description	Start year of implementation	Implementing entity or entities	Mitigation impact Estimate of mitigation impact (kt CO ₂ eq)
										2020
EP-B01 : ETS : specific policy for quota allocation to electricity producers	Yes	Energy production	CO ₂	Establishment of the ETS system in Belgian law; allocations of quotas to reduce GHG emissions from the electricity sector	Economic	implemented	Specific improvement for allocation of emission quotas to power plants	2004	Health, Food Chain Safety and Environment FPS - DG Environment (register) Flanders: VEA, LNE Brussels: IBGE Wallonia : AwAC	Impact included in EP-A01
EP-B02 : Energy planning by electricity producers	Yes	Energy production	CO ₂	Energy efficiency improvement and GHG emission reductions in the electricity production sector.	Planning	implemented	Energy planning is required from every high energy consumer industrial site in the Flemish Region. The electricity sector is included in this regulation	2004	Flanders: VEA	NE
EC-A01 : Promotion of rational use of energy by electricity distribution companies as part of their public service obligation	Yes	Conservation of energy	CO ₂	Promote energy savings through electricity distributors	Economic	implemented	In Flanders, the energy distributor manages a compulsory programme promoting RUE among customers, featuring information, demonstrations, various energy services and financial supports for actions and improvements.	2004	Flanders: VEA Brussels: IBGE, Sibelga	Impact partly included in EC-B01
EC-A02 : Mobilizing the resources of the natural gas fund	Yes	Conservation of energy	CO ₂	Rational use of energy, extension of natural gas network and security actions	Economic	implemented	An initial fund managed by natural gas distribution companies, it has now been re-allocated to the Regions for RUE actions, extension of the gas network and security actions.	2004	Flanders: VEA Brussels: Sibelga	Impact included in EC-B01
EC-A03 : Energy performance and certificate of buildings	Yes	Conservation of energy	CO ₂	Improving the energy efficiency of buildings (by transposition of the EC directive on energy performance of buildings and establishment of the methodology to be used to evaluate the performance of buildings)	Regulatory	implemented	Energy performance and certification of buildings (legal and methodological aspects): actions taken in order to transpose the directive including development of the methodology needed to quantify regulations for new buildings and the performance of existing buildings for certification.	2004	Flanders: VEA Wallonia: DGO4 Energy Brussels: IBGE	147

Name of mitigation action	Included in with measures GHG projection scenario	Sector(s) affected	GHG(s) affected	Objective and/or activity affected	Type of instrument	Status of implementation	Brief description	Start year of implementation	Implementing entity or entities	Mitigation impact Estimate of mitigation impact (kt CO ₂ eq)
										2020
EC-A04 : Appointment of accredited energy experts	Yes	Conservation of energy	CO ₂	Providing the necessary expertise and information to individuals (and businesses) eager to increase the energy efficiency of their buildings	Information	implemented	Accreditation of energy experts based on specific criteria to guarantee their expertise	2004	Flanders: VEA Brussels: IBGE	NE
EC-A05 : Promotion of energy efficient electrical appliances	Yes	Conservation of energy	CO ₂	Reducing electricity consumption by individuals	Economic	implemented	By promoting energy efficient electric appliances through performance standards and labelling. In addition, premiums are offered with the purchase of efficient appliances.	2004	FED : Health, Food Chain Safety and Environment FPS - DG Environment Economy, SMEs, Self-Employed and Energy FPS - DG Energy (E2) Brussels: IBGE, Sibelga	NE
EC-B01 : Financial support to RUE and RES in the residential sector	Yes	Conservation of energy	CO ₂	Reducing energy consumptions in dwellings. Efforts beyond what the regulation imposes are rewarded.	Economic	implemented	Financial incentives for the rational use of energy (RUE) and RES : combination of regional subsidies and federal tax deduction for investments generating energy savings. Covers most equipment such as wall insulation, high performance double glazing, condensing boilers, heating system regulations, efficient hot water heaters and heat pumps. In Wallonia, application for subsidies can be submitted directly or through the "Alliance for Employment and Environment", proposing conventions between house owners and the authority : individuals commit to realize a package of investments (minimum one action on the building envelope and one on the heating/SHW system) and authorities provide subsidies and offer a 0% interest loan to cover the additional expense. The tax deduction was discontinued in January 2012, except for roof insulation (albeit at a lower rate).	2004	FED : Finance FPS Flanders: VEA Wallonia : DGO4 Energy Brussels: IBGE, Sibelga	1 823

Name of mitigation action	Included in with measures GHG projection scenario	Sector(s) affected	GHG(s) affected	Objective and/or activity affected	Type of instrument	Status of implementation	Brief description	Start year of implementation	Implementing entity or entities	Mitigation impact Estimate of mitigation impact (kt CO ₂ eq)
										2020
EC-B02 : Efficiency and emission regulation for boilers and stoves in the residential sector	Yes	Conservation of energy	CO ₂	Establishing minimum efficiency requirements boilers, stoves and HVAC systems	Regulatory	expired	Specific constraints on boilers : standards on CO, PM and NOx emissions and energy efficiency. Compulsory on-site inspections on a regular basis to ensure standards are met.	2004	FED : Health, Food Chain Safety and Environment FPS - DG Environment Flanders: VEA, LNE	Impact included in EC-B01
EC-B03 : Specific support for RUE initiatives for people with low incomes	No	Conservation of energy	CO ₂	Supporting RUE actions on low wages dwellings, which are often bad energy performers	Economic	planned	Specific RUE aid for unprivileged people. Flanders : establishment of a fund to help them finance RUE initiatives, higher subsidies, social roof insulation projects for rental houses, ... Wallonia : special subsidies for people who do not pay income taxes (and thus cannot benefit from tax deductions)	2004	Flanders: VEA Brussels: IBGE, AATL Wallonia : DG04 Energy	6
EC-B04 : Improvement of consumer information on the environmental impact of products	Yes	Conservation of energy	CO ₂	Environmental labelling requirements, standardized methodologies to evaluate environmental impact of products and equipment	Information	implemented	Improve information available to consumers to promote products with low environmental impacts	2004	FED : Health, Food Chain Safety and Environment FPS - DG Environment Economy, SMEs, Self-Employed and Energy FPS - DG Energy (E2)	NE

Name of mitigation action	Included in with measures GHG projection scenario	Sector(s) affected	GHG(s) affected	Objective and/or activity affected	Type of instrument	Status of implementation	Brief description	Start year of implementation	Implementing entity or entities	Mitigation impact Estimate of mitigation impact (kt CO ₂ eq)
										2020
EC-B05 : Energy performance of buildings (residential sector)	Yes	Conservation of energy	CO ₂	Transposition of the EC directive on energy performance of buildings	Regulatory	implemented	Imposition of energy requirements (Energy Performance Decree standard) to homes and apartments Flanders: the requirements for new buildings are tightened step by step so as to reach nearly energy neutral new buildings in 2021. The information on the energy certificates of buildings is gradually expanded so as to better inform (potential) owners and users of buildings. Wallonia : same procedure, however only recent stages have been officially decided. Brussels Capital Region: The Government's decree of 21 December 2007 on EPB stipulates that new buildings have to be passive and heavily renovated ones very low energy starting in 2015.	2004	Flanders: VEA Wallonia : DG04 Energy Brussels: IBGE	Impact included in EC-A03
EC-B05 bis : Energy performance and certification of buildings (residential) - WAM	No	Conservation of energy	CO ₂	Improving the energy efficiency of buildings (by transposition of the EC directive on energy performance of buildings and establishment of the methodology to be used to evaluate the performance of buildings)	Regulatory	planned	Additional steps in the energy performance of buildings (partim residential sector): Flanders : stricter requirements Wallonia : completing application schedule up to 2020	2004	Flanders: VEA Wallonia : DG04 Energy Brussels: IBGE	63
EC-B06 : Adaptation of urbanistic regulations to facilitate the promotion of RUE and RES in the residential sector	Yes	Conservation of energy	CO ₂	Integrating energy conservation and climate change considerations in spatial planning by modifying territorial planning code	Regulatory	implemented	Optimizing spatial planning requirements in the context of energy efficient building and renovation. For instance, currently, external insulation of buildings in cities can be prohibited if the thickness of the insulation reduces the area of the sidewalk	2004	Flanders : Rural planning Wallonia : DG04 Aménagement du territoire	Impact included in EC-B01

Name of mitigation action	Included in with measures GHG projection scenario	Sector(s) affected	GHG(s) affected	Objective and/or activity affected	Type of instrument	Status of implementation	Brief description	Start year of implementation	Implementing entity or entities	Mitigation impact Estimate of mitigation impact (kt CO ₂ eq)
										2020
EC-C01 : Third party financing in the public sector	Yes	Conservation of energy	CO ₂	Promoting energy savings in public buildings (federal level)	Economic	implemented	Using a third party investor fund in the public sector	2004	FEDESCO (Federal Energy Services Company) : a limited company under private law.	132
EC-C02 : Energy and environmental performance and indoor climatic requirements in buildings of the services and community sectors	Yes	Conservation of energy	CO ₂	Transposing the energy performance of buildings directive for the tertiary sector	Regulatory	implemented	Imposing energy requirements (including indoor) to tertiary buildings (Energy Performance Decree standard) Brussels Capital Region: The Government's decree of 21 December 2007 regarding EPB stipulates that new buildings has to be passive and heavy renovated ones very low energy starting in 2015	2004	Flanders: VEA Wallonia : DGO4 Energy Brussels: IBGE	172
EC-C02bis : Energy performance and certification of buildings (services and communities sectors) - WAM	No	Conservation of energy	CO ₂	Improving the energy efficiency of buildings (by transposition of the EC directive on energy performance of buildings and establishment of the methodology to be used to evaluate the performance of buildings)	Regulatory	planned	Additional steps in the energy performance of buildings (part-time tertiary sector): Flanders : stricter requirements Wallonia : completing application schedule up to 2020	2004	Flanders: VEA Wallonia : DGO4 Energy Brussels: IBGE	94
EC-C03 : Specific energy efficiency measures in the medical, social and education sectors	Yes	Conservation of energy	CO ₂	Providing incentives to local authorities and associated institutions to improve the energy efficiency of their building stocks	Economic	adopted	Subsidies (up to 30% of total investment) to promote RUE in hospitals, retirement homes, social infrastructures and schools + test cases and demonstration projects	2004	Flanders: VIPA, VMSW, AGIO, GO! Wallonia : DGO4 Energy Brussels: IBGE	90

Name of mitigation action	Included in with measures GHG projection scenario	Sector(s) affected	GHG(s) affected	Objective and/or activity affected	Type of instrument	Status of implementation	Brief description	Start year of implementation	Implementing entity or entities	Mitigation impact Estimate of mitigation impact (kt CO ₂ eq)
										2020
EC-C04 : Energy and environmental performance and indoor climatic requirements in industrial buildings	Yes	Conservation of energy	CO ₂	Transposition of the Directive on the energy performance of buildings to the industrial sector	Regulatory	implemented	Imposition of energy requirements (including indoor) to industrial buildings (Energy Performance Decree standard)	2004	Brussels: IBGE Wallonia : DGO4 Energy Flanders: VEA	NE
EC-C05 : Financial support for sustainable energy policies in sheltered and social workshops	Yes	Conservation of energy	CO ₂	RUE in sheltered and social workshops	Economic	implemented	Specific financial mechanisms to protect low income populations	2004	Flanders: WSE	Impact included in EC-B01
IP-A01 : Implementation of the ETS in the industrial sector	Yes	Industrial processes	CO ₂	Reducing emissions from the industry sector involved in ETS	Regulatory	implemented	Belgian National Allocation Plan 2008-2012 European system on scope 2013-2020	2004	Flanders: LNE Wallonia : AwAC Brussels: IBGE	Impact included in IP-A02
IP-A02 : Long Term Energy/ CO ₂ efficiency Agreements in the industrial sector	Yes	Industrial processes	CO ₂	Improving energy efficiency in industries, by raising profitability criteria for RUE investments from a BAU 2 years of payback time to an IRR of 12,5% through an agreement (Flanders)	Voluntary/negotiated agreement	implemented	Benchmarking and voluntary agreements through contracts signed with public authorities. Enterprises (directly or through their professional associations) make a voluntary commitment to improve their energy efficiency within a certain time horizon. Targets are quantified by benchmarking (within 10% of the best performer) or by energy audit, considering all RUE investments which have an IRR of 12,5%. Considered separately from Wallonia because it is considered in projections the WEM scenario	2004	Flanders : VEA Wallonia : DGO4 Energy Brussels: IBGE Industrial associations	1 800

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										2020
IP-A02 bis : Long Term Energy/CO ₂ efficiency agreements in the industrial sector (WAM)	No	Industrial processes	CO ₂	Improving energy efficiency in industries, by raising profitability criteria for RUE investments from a BAU 2 years of payback time to 5 years within an agreement (Wallonia)	Voluntary/negotiated agreement	planned	Voluntary agreements through contracts signed with public authorities. Enterprises (directly or through their professional associations) make a voluntary commitment to improve their energy efficiency within a certain time horizon. Targets are quantified by energy audit, considering all RUE investments which have a payback time under 5 years Considered separately from Flanders because it is not considered in projections the WEM scenario	2013	Flanders : VEA Wallonia : DGO4 Energy Brussels: IBGE Industrial associations	1 708
IP-A03 : Energy planning in industries	Yes	Industrial processes	CO ₂	Increasing energy and CO ₂ awareness in industries	Information	implemented	Compulsory drafting of energy plans by industries in Flanders. Commitments issued from voluntary agreements (see EC-C02) are accepted as energy plans.	2004	Flanders : VEA	351
IP-A04 : Reference Centres and industrial "clusters"	Yes	Industrial processes	CO ₂	Creating synergies and creativity among complementing industries in specific markets	Other	implemented	Creating clustered structures to induce synergies among enterprises involved in energy technologies	2004	Flanders: VEA Wallonia : DGO6 Economy Brussels: IBGE	NE
IP-A05 : Promoting sustainable industrial estates	Yes	Industrial processes	CO ₂	Attracting industries in specific activity zones where they can benefit from energy system integration and/or intermodal infrastructure for transport	Planning	implemented	Promoting sustainable industrial sites which encourage transport modal shifts, promote energy integration networks (connecting energy demand and energy production processes) and produce heat and electricity as by-products, which are then distributed within industries.	2004	Wallonia : DGO6 Economy	NE
IP-A06 : Specific financial measures and ecology premiums for industry	Yes	Industrial processes	CO ₂	Financial supports to RUE investments in industries	Economic	implemented	Specific financial measures and ecology premiums: tax deduction and subsidies for energy saving investments in industry	2004	FED : Finance FPS	17

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										2020
IP-B01 : HFC and PFC emissions reduction targets	Yes	Industrial processes	HFC PFC	Reduction of F-gas emissions	Education	implemented	Reducing the use of fluorinated greenhouse gases (HFCs and PFCs) by training certified personnel in handling the gas when installing and maintaining refrigeration systems	2004	FED : Mobility and Transport FPS Health, Food Chain Safety and Environment FPS - DG Environment Flanders: LNE Brussels: IBGE Wallonia : AwAC	NE
IP-B02 : SF ₆ emissions reductions	Yes	Industrial processes	SF ₆	Reducing SF ₆ -emissions from high-voltage switches	Education	implemented	Reduce SF ₆ -emissions through compulsory certification of personnel involved in the recovery, collection, recycling, regeneration and destruction of SF ₆ from high-voltage switches	2004	Flanders: LNE	NE
IP-C01 : Specific emission reduction agreement with nitric acid producers	Yes	Industrial processes	N ₂ O	Reducing N ₂ O emissions from nitric acid production	Voluntary/negotiated agreement	implemented	Covenants to reduce N ₂ O emissions from nitric acid production. Required actions are concluded. Emission reductions are effective	2004	Flanders: LNE Wallonia : AwAC Brussels: IBGE	3 361
IP-C02 : Specific emission reduction agreement with caprolactam producers	No	Industrial processes	N ₂ O	Flemish Region: A reduction of N ₂ O emissions from the production of caprolactam	Voluntary/negotiated agreement	implemented	The N ₂ O emissions are generated by a caprolactam production site located in the Flemish Region. The Flemish Government is conducting a study in cooperation with this company to identify additional cost efficient measures on the site. On the basis of the results of this study, a decision will be made between several policy options to ensure the identified measures are carried out.	2004	Flanders: LNE	NE

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										2020
TR-A01 : Mobility plans at local level	Yes	Transports	CO ₂	Improving alternative transport modes for the journey to work	Planning	implemented	Federal state: Survey "Journey to work" for companies with 100 people or more (legal obligation). The publication of the results encourages companies to realize an Action Plan for the transport of their employees. A study is planned to return the survey results more efficiency back to the firms. Brussels : Improve mobility plans at local level (schools, enterprises and businesses) by promoting car-sharing and alternatives transport modes.	2004	FED : Mobility and Transport FPS Brussels: IBGE, AED, communes Wallonia : DGO2 Mobility	15

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										2020
TR-A02 : Improve and promote public transport	Yes	Transports	CO ₂	Intensifying the modal shift from individual cars towards public transports (trains, buses, tramways and subways) but also towards alternative "soft" transport means (bicycles and pedestrians)	Planning	implemented	<p>Improve and promote public transport by:</p> <ul style="list-style-type: none"> - setting quantified targets with the authorities and including them into their management conventions to increase the use of public transport. - improving infrastructures and services - creating new parking places for cars and bicycles close to train stations - reducing fares for certain categories of travellers - promoting the combined use of bicycle and public transport and therefore including the promotion of bicycles as an objective of public transport companies <p>Federal state: Implementation of Regional Express Network (RER) + Improving the quality of rail services (Measures of the Federal Plan for Sustainable development nr2 : 32804-1, 32808-2 , 32812-2, 32808-1 , 32813-1 , 32813-2 , 32814-1 and -2, 32806-3)</p>	2004	FED : Mobility and Transport FPS Brussels: IBGE, AED, STIB Flanders : De Lijn, MOW Wallonia : TEC	3 440
TR-A03 : Promote the use of bicycles	Yes	Transports	CO ₂	Increasing the share of bicycles in the modal split.	Economic	implemented	<p>Promote the use of bicycles by creating or improving infrastructures such as parking facilities. Promotion of cycling through public transport companies.</p> <p>Federal state: to improve the intermodality rail-bikes : Measure of the Federal Plan for Sustainable Development nr2 :</p> <ul style="list-style-type: none"> - 32815-4 : installation of bike points and secure parking for bikes at railway stations 	2004	FED : Finance FPS Mobility and Transport FPS Brussels: AED, IBGE Flanders: MOW	15

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										2020
TR-A04 : Promote multimodal freight transport	Yes	Transports	CO ₂	An increase of the share of alternative transport in the modal split for freight.	Economic	implemented	Federal state: Rail : - Standardisation of containers 467-a, ITS containers 467-b - Construction of new infrastructures and improvement of existing infrastructures - Offering subsidies for domestic freight transport by train. Waterways: - financial support to the profession - financial support for the purchase of energy efficient barges.	2004	FED : Mobility and Transport FPS Wallonia : DGO2 Voies navigables et intermodalité Brussels: Port de Bruxelles Flanders: MOW	62
TR-A05 : Improve road transport efficiency	Yes	Transports	CO ₂	Smooth travel on roads	Economic	implemented	Improvement of transport efficiency through congestion/traffic jam management and traffic regulation	2004	Brussels: AED	NE
TR-A06 : Parking regulations	Yes	Transports	CO ₂	Urban planning : promoting available public parking and discouraging surface parking and endless search for parking places	Regulatory	implemented	Urban constraints on parking	2004	Brussels: IBGE, AED, AATL, communes	Impact included in TR-A02
TR-A07 : Taxation of road transport	No	Transports	CO ₂	Discouraging the use of individual cars in certain areas. Promoting the purchase of efficient and clean vehicles	Fiscal	planned	Greening taxation on road transport	2004	Brussels: AFB, AED, IBGE	NE
TR-A08 : Free public transport for commuters	Yes	Transports	CO ₂	Promoting the use of public transport	Economic	implemented	Free public transport for commuters. Under social regulations, 80% of the travel costs of workers (by train) paid by their employer. This policy ensures that the remaining 20% are paid by the public authorities. (Measure of the Federal Plan for Sustainable Development nr2 : 32809-1)	2004	FED : Mobility and Transport FPS	Impact included in TR-A02

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										2020
TR-B01 : Promotion of car-pooling	Yes	Transports	CO ₂	Flemish Region: An increase of the seat occupancy in commuter traffic from 1.2 to 1.3 (average seat occupancy target of 1.4)	Regulatory	implemented	Measure of the Federal Plan for Sustainable Development nr2 : - 455c : * Changing the rules of the road, allowing road managers to open a road lane reserved for buses, cars occupied by several people, vehicles used for the transportation company (journey to work). - Extension of Liability (Compulsory Insurance) coverage for carpools. - Insurance on work accidents (mandatory for companies) indemnify the incapacity of the driver and passengers. The journey to work required may include a visit to the collection of carpools. - The compensation paid by the employer for the journey to work is not taxable. - The driver can deduct EUR 0.15 / km from taxes without having to declare the compensation paid by carpools.	2004	FED : Finance FPS Mobility and Transport FPS Flanders: MOW	13
TR-B02 : Promotion of car sharing	Yes	Transports	CO ₂	Reducing the number of cars on the road	Planning	implemented	Promotion of car-sharing The railroad company participates in the organization of shared cars (type Cambio) by reserving parking places for cars shared close to railway stations.	2004	Brussels: IBGE Flanders: Mow	NE
TR-B03 : Promotion of teleworking	Yes	Transports	CO ₂	Promoting teleworking of general public to reduce mobility needs	Regulatory	expired	Promote teleworking	2004	FED : Personnel and Organisation FPS	NE
TR-B04 : Improve freight transport efficiency	Yes	Transports	CO ₂	Improving freight transport efficiency	Voluntary/negotiated agreement	implemented	Optimizing timetables, loading and unloading procedures and the logistics of freight transport by road	2004	Brussels: Port de Bruxelles Flanders: MOW	NE

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										2020
TR-B05 : Ecodriving	Yes	Transports	CO ₂	Smooth traffic and reduced emissions by teaching eco-driving	Education	implemented	Promotion of eco-driving by training professional drivers (buses, public transports and lorry drivers) Measure of the Federal Plan for Sustainable Development nr2 : - 455-C : transposition of directive 2003/59 : driver eco training - 32810-1 power efficiency of engines and ecodriving of truck drivers : monitoring of EU standard	2004	FED : Mobility and Transport FPS Wallonia : TEC Brussels: STIB Flanders : De Lijn, MOW, LNE	62
TR-C01 : Tax deductions for the purchase of new clean vehicles	Yes	Transports	CO ₂	Promoting the purchase of clean cars	Fiscal	implemented	Tax deduction when purchasing clean vehicles : Automatic reduction in purchase to individuals was discontinued in January 2012. A recalculation of the benefit in kind was introduced for company cars. Until end 2012, financial help for the purchase of an electric vehicle (limited to EUR 9 190).	2004	FED : Finance FPS + Mobility and Transport FPS + Health, Food Chain Safety and Environment FPS - DG Environment	156
TR-C02 : Promoting the purchase of clean vehicles	No	Transports	CO ₂	Promoting the purchase of clean cars	Information	implemented	Promoting the purchase of clean vehicles by advertising CO ₂ emissions controlled and annual publication containing information on CO ₂ emissions of all new vehicles on the Belgian market and identifying clean vehicles eligible for fiscal deduction. Bonuses and penalties exist in the Walloon system for buying a private vehicle according to CO ₂ emissions for both new and used cars.	2004	FED : Mobility and Transport FPS Wallonia DGO2 Budget	11

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										2020
TR-C03 : Vehicles' environmental impacts appraisal (ECOSCORE) and adaptation of taxes	No	Transports	CO ₂	Promoting the purchase of clean cars	Fiscal	implemented	Environmental Impact Assessment of vehicles, reformation of the road fund tax and the tax on entry into service (ECOSCORE)	2004	Wallonia : AwAC Brussels : IBGE Flanders : LNE	Impact included in TR-C01
TR-C04 : Specific support for the construction of clean vehicles	Yes	Transports	CO ₂	Promoting clean cars	Research	implemented	Specific support for the construction of clean vehicles	2004	Wallonia : DGO6 Economy	NE
TR-C05 : Best Available Technology for public transport	Yes	Transports	CO ₂	Promoting clean vehicles in public transport	Regulatory	implemented	Purchase of clean vehicles for public transport	2004	Wallonia : TEC Brussels : STIB Flanders : De Lijn	NE
TR-D01 : Promoting biofuels	Yes	Transports	CO ₂	Reaching 5.75% biofuels in 2010	Fiscal	implemented	Tax exemption for biofuels	2004	FED : Health, Food Chain Safety and Environment FPS - DG Environment + Economy, SMEs, Self-Employed and Energy FPS - DG Energy (E2)	895

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										2020
AG-A01 : Reducing emissions from cultivation that uses greenhouses (glasshouses)	Yes	Agriculture and forestry	CO ₂	The vast majority of the Belgian greenhouse cultivation takes place in the Flemish Region, the rest is in the Walloon Region Flemish Region: increase the share of natural gas and other more sustainable energy sources (CHP, biomass, ...) in energy consumption by greenhouses cultivation Walloon Region: reducing energy related CO ₂ emissions from greenhouse cultivation through RUE	Economic	implemented	Subsidies, information, promotion of CHP and HP, investigation of available residual energy/CO ₂ from industry to be recycled in greenhouses. In the Walloon region, a subsidy is available to support the design of high efficiency greenhouses.	2004	Wallonia : DGO4 Energy Flanders: LV, VEA	NE
AG-A02 : Financial incentives for rational use of energy in agriculture	Yes	Agriculture and forestry	CO ₂	Support for farmers to use energy rationally	Economic	implemented	Financial instruments available for RUE and RES in the private sectors are also made available for agriculture. Moreover, specific financial instruments exist for the agriculture sector (Flanders)	2004	Energy adm + Flanders also LV	NE
AG-B01 : Reduction of GHG emissions from fertilizers and manure usage	Yes	Agriculture and forestry	N ₂ O CH ₄	Managing and controlling the use of manure and fertilisers	Information	implemented	Rural development plans are supplemented by specific measures on the rational use of organic and nitrogen based fertilizers. Such policies initially aimed at reducing the stress of pollution on surface and underground waters contribute to the reduction of N ₂ O and CH ₄ emissions. Reductions in livestock sizes are also expected and should also contribute to emissions reductions. Moreover, cross compliance regulations aim to protect pastures : prohibiting pastures reductions, regulating carbon and acidity contents and using measures to combat erosion.	2004	administrations of agriculture	NE

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										2020
AG-C01 : Limiting deforestation and promoting reforestation	Yes	Agriculture and forestry	CO ₂	Maintaining the CO ₂ sink potential of Belgian forests	Economic	implemented	Limiting deforestation and encouraging reforestation	2004	Brussels: IBGE Other regions : relevant administrations in collaboration with AwAC(Wallonia) or LNE (Flanders)	NE
AG-C02 : Preserve the ecological stability of forests (certification)	Yes	Agriculture and forestry	CO ₂	Preserving the ecological stability of forests	Regulatory	implemented	Certification FSC & PEFC of forests	2004	FED : Health, Food Chain Safety and Environment FPS - DG Environment Brussels: IBGE Other regions : relevant administrations in collaboration with AwAC(Wallonia) or LNE (Flanders)	NE
AG-D01 : Wood-energy plan	Yes	Agriculture and forestry	CO ₂	Wood energy projects in rural areas	Economic	implemented	Wallonia : Promotion of wood energy installations (wood heat generators, gasification of wood chips, other valorisation techniques). The main target of the plan are collectivites and municipalities	2004	Wallonia : DGO4 Energy and Walloon rural foundation	NE
AG-D02 : Promote dedicated energy crops	Yes	Agriculture and forestry	CO ₂	Flemish Region: promotion of (dedicated) energy crops Walloon Region : pilot projects	Economic	implemented	Promotion of (dedicated) energy crops	2004	Flemish Region Wallonia : DGO4 Energy, & Walloon rural foundation	NE
AG-D03 : Specific support to promote biomethanisation	Yes	Agriculture and forestry	CO ₂ CH ₄	Promotion of biomethanisation in agricultural establishments	Economic	implemented	Specific measures to promote the sector of biomethanisation by the Walloon Region (federal Law Gazette, 13/11/2008)	2004	Wallonia : DGO4 Energy & DGO3 Agriculture	NE

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										2020
AG-D04 : Quality standards for biofuels (wood pellets)	Yes	Agriculture and forestry	CO ₂ N ₂ O	Enhancing solid biomass markets, creating confidence in wood-energy products	Regulatory	implemented	The federal State establishes quality standards for solid biofuels to enhance the market and promotes a purchasing policy preferential to certified wood.	2004	FED : Health, Food Chain Safety and Environment FPS - DG Environment + Economy, SME, Self-Employed and Energy FPS - DG Energy (E2) + Finance FPS	NE
WA-A01 : Minimise quantities of wastes dumped into landfills	Yes	Waste	CH ₄	Waste generation prevention	Regulatory	implemented	Minimise quantity of waste into landfill	2004	FED : Finance FPS Health, Food Chain Safety and Environment FPS - DG Environment + Economy, SME, Self-Employed and Energy FPS - DG Energy (E2) Brussels: IBGE Wallonia : DGO3 Waste management Flanders: OVAM	NE
WA-B01 : Optimize incineration of wastes	Yes	Waste	CO ₂	Promoting energy from waste	Economic	implemented	Optimization of new waste incineration (incinerators)	2004	Brussels: ABP Flanders: OVAM	NE
WA-C01 : Landfill gas flaring and recuperation	Yes	Waste	CH ₄	Recuperation and use of biogas	Economic	implemented	All landfills in operation are equipped with biogas recovery and valorising biogas to produce electricity by generating green certificates to help support the costs. Former landfills, which are out of operation are equipped with flaring devices. In accordance with EC Directive 1999/31/EC, organic waste is no longer accepted in landfills.	2004	Flanders : OVAM Wallonia : DGO3 : waste management	NE
WA-D01 : Biomass flows management	Yes	Waste	CH ₄	Quality control of biomass flows	Regulatory	implemented	Manage and quality control of biomass available for material recuperation or for energy usage	2004	Brussels: IBGE, ABP	0

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										2020
WA-E01 : Waste refrigerating fluids recuperation and management	Yes	Waste	HFC	Improving F-gases management in automobile maintenance	Education	implemented	Reducing F-gas emissions through training certified personnel	2004	Brussels: IBGE Flanders: LNE	NE
SE-A01 : Climate Change Awareness	Yes	Cross cutting	CO ₂ , CH ₄ , N ₂ O, HFC, PFC, SF ₆	Raising climate change awareness of the public	Information	implemented	Websites, brochures, information campaigns, ...	2004	FED : Health, Food Chain Safety and Environment FPS - DG Environment Brussels: IBGE Wallonia : AwAC, DGO4 Energy Flanders : LNE, VEA	NE
SE-A02 : Tools to promote rational energy use and renewable energy	Yes	Cross cutting	CO ₂	Producing tools to provide information and raise awareness, for example brochures, CO ₂ calculators, energy simulators etc to promote rational energy use and renewable energy	Information	implemented	Development of communication tools concerning climate change	2004	FED : Health, Food Chain Safety and Environment FPS - DG Environment Brussels: IBGE Wallonia : AwAC, DGO4 Energy Flanders : LNE, VEA	Impact included in EC-B01
SE-A03 : Environmental awareness in schools	Yes	Cross cutting	CO ₂	Using tools to increase awareness on climate change among students and teachers	Education	implemented	Environmental Care at School (MOS project)	2004	FED : Health, Food Chain Safety and Environment FPS - DG Environment Brussels: IBGE Wallonia : AwAC, DGO4 Energy Flanders : LNE, VEA	Impact included in EC-B01
SE-A04 : Eco-campus	Yes	Cross cutting	CO ₂	Increasing environmental awareness - including climate change awareness of university students	Education	implemented	Ecocampus programme for Universities	2004	Flanders: LNE	Impact included in EC-B01

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										2020
SE-A05 : Financial support for energy counsellors in interprofessional organisations	Yes	Cross cutting	CO ₂	Promoting RUE and RES in SMEs through information provision by professional organizations	Economic	implemented	Provision of project grants for energy consultants to inter-professional organizations	2004	Brussels: IBGE Flanders: VEA	NE
SE-A06 : Training of energy managers	Yes	Cross cutting	CO ₂	Establishing energy/CO ₂ skills among managers of large buildings in the tertiary sector	Education	implemented	Training of energy / Vocational-Technical	2004	Brussels: IBGE Wallonia DGO4 Energy	NE
SE-A07 : Support to local initiatives	Yes	Cross cutting	CO ₂	Supporting initiatives by citizens to increase awareness of saving energy and climate change issues	Economic	implemented	Action to support local initiatives	2004	FED : Economy, SMEs, Self-Employed and Energy FPS - DG Energy (E2) Brussels: IBGE	NE
SE-A08 : Urban policy	Yes	Cross cutting	CO ₂ CH ₄ N ₂ O	Recognising and supporting the importance of large cities management	Other	implemented	Urban Policy	2004	FED : Social Integration, Fight against Poverty and Social Economy PPS - Federal Service for Urban policy	NE
SE-B01 : Supporting sustainable cooling systems in dwellings	Yes	Cross cutting	CO ₂	Feasibility projects to demonstrate alternative methods to conventional HVAC	Education	expired	Support to (natural and) renewable cooling	2004	Brussels: IBGE Flanders : relevant administrations LNE, VEA	NE
SE-B02 : Guidance on rational use of energy to low income communities	No	Cross cutting	CO ₂	Improving and demonstrating RUE in public housing	Economic	planned	Supporting residents of disadvantaged groups in rational use of energy to meet rational deal with energy	2004	Brussels: IBGE Flanders : VEA & Bond Beter Leefmilieu Wallonia : DGO4 Energy & CPAS	Impact included in EC-B01

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										2020
SE-B03 : Pilot projects in social housing to evaluate sustainable energy measures	Yes	Cross cutting	CO ₂	Raising awareness of sustainability in social housing users and providers	Education	implemented	Evaluating sustainable energy measures through pilot and demonstration projects in social housing	2004	Brussels: IBGE Flanders: VMSW	Impact included in EC-B01
SE-B04 : Awareness of rational energy use in businesses offices	Yes	Cross cutting	CO ₂	Raising awareness of rational energy use in office buildings	Information	implemented	Awareness Campaign business offices	2004	Brussels: IBGE, ABE	Impact included in EC-B01
SE-B05 : Youth, space and environment project	Yes	Cross cutting	CO ₂	Raising awareness of rational energy use of young people	Education	implemented	JeROM project (Youth, Space and Environment)	2004	Flanders: LNE	Impact included in EC-B01
SE-B06 : Guidance on rational energy use in adults associations	Yes	Cross cutting	CO ₂	Supporting RUE by adults	Information	implemented	NME for adults (associations)	2004	Flanders: LNE	Impact included in EC-B01
SE-B07 : Promotion and financial support for energy audits in individual dwellings	Yes	Cross cutting	CO ₂	Encouraging energy audits in households	Economic	implemented	Proposed energy audits on individuals	2004	Brussels: ABEA Wallonia : DGO4 Energy	Impact included in EC-B01
SE-B08 : Energy counsellors	Yes	Cross cutting	CO ₂	Promoting RUE in buildings through municipalities	Information	implemented	Availability of energy advisors	2004	Brussels: ABEA	Impact included in EC-B01
SE-B09 : Eco-construction	Yes	Cross cutting	CO ₂	Creating clusters of expertise for RUE in building construction	Planning	implemented	Ecobuild	2004	Brussels: IBGE	Impact included in EC-B01
SE-C01 : Training of energy and building professionals	Yes	Cross cutting	CO ₂	Training professionals in construction	Education	implemented	Training of professionals	2004	Brussels: IBGE	Impact included in EC-B01

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										2020
SE-C02 : Eco-efficiency scans	Yes	Cross cutting	CO ₂	Improving eco-efficiency in SMIs (small and medium size industries)	Economic	implemented	Investments in eco-efficiency of SMEs: improve energy efficiency by designing environmentally friendlier products, adapting production processes and better valorising wastes; examining markets to try to adapt to customers demands and demonstrating benefits of changes (e.g. profitability and better respect of environment)	2004	Regional energy efficiency departments	Impact included in IP-A02
SE-C03 : Raise awareness about the reduction of F-gasses in the refrigeration sector	Yes	Cross cutting	HFC	Reducing F-gas emissions in the refrigeration sector	Information	implemented	Increase specific awareness about cooling needs and solutions through providing information about the relevant legislation and ways to reduce emissions	2004	Flemish Region : LNE Brussels Region : IBGE/BIM Walloon Region : AwAC	NE
SE-C04 : Social responsibility of businesses	Yes	Cross cutting	CO ₂	Managing enterprises in coherence with their social and environmental neighbourhood	Information	implemented	Social responsibility of enterprises	2004		NE
SE-C05 : Eco-dynamic label for businesses	Yes	Cross cutting	CO ₂	Recognising clean enterprises to promote good practice	Information	implemented	The eco-dynamic enterprise label	2004	Brussels: IBGE	NE
SE-D01 : Clean vehicles promotion campaign	Yes	Cross cutting	CO ₂	Informing the public purchasing choices of clean vehicles	Information	expired	Promoting the purchase of clean vehicles	2004	Brussels: IBGE	Impact included in TR-C01 and TR-C02
SE-D02 : Eco-driving promotion campaign	No	Cross cutting	CO ₂	Promoting smooth and clean driving	Information	implemented	Sensitization campaign on eco-driving	2004	Brussels: IBGE Flanders: LNE, MOW	Impact included in TR-B05
SE-D03 : Meeting on sustainable mobility needs campaign	Yes	Cross cutting	CO ₂	Increasing the use of sustainable transport measures	Information	implemented	Raise awareness of citizens to satisfy their mobility needs in a sustainable way	2004	Brussels: IBGE Flanders: LNE, MOW	NE

Name of mitigation action	Included in with measures GHG projection scenario	Sector(s) affected	GHG(s) affected	Objective and/or activity affected	Type of instrument	Status of implementation	Brief description	Start year of implementation	Implementing entity or entities	Mitigation impact Estimate of mitigation impact (kt CO ₂ eq)
										2020
SE-E01 : Knowledge Centre on energy for agriculture and horticulture	Yes	Cross cutting	CO ₂	Promoting clean and sustainable agriculture and forestry	Education	implemented	Establishment and supporting of an energy centre for agriculture and horticulture	2004	Flanders: LV	NE
SE-E02 : Environmental accounting/reporting	No	Cross cutting	CO ₂ CH ₄ N ₂ O	Reducing emissions from the agricultural sector by raising awareness of farmers through environmental accounting/reporting	Information	implemented	Encourage the use of environmental accounting/reporting	2004	Flanders: LV	NE
OB-A01 : Sustainable public procurement	Yes	Cross cutting	CO ₂	Good example shown by the public administration sector	Economic	implemented	Sustainable public procurement	2004	FED : pilot : Sustainable Development PPS (Federal Public Planning Services) --> all the federal services should implement this action Brussels: Public bodies	NE
OB-A02 : Sustainable criteria for community catering	Yes	Cross cutting	CO ₂	Integrating sustainability as an element in the criteria for food purchases	Economic	implemented	Optimization of catering on the basis of sustainability criteria	2004	FED : Sustainable Development PPS (Federal Public Planning Services)	NE
OB-A03 : Environmental management system	Yes	Cross cutting	CO ₂	Public administrations environmental certification and support to other organisations	Planning	implemented	Establishment of an environmental management system	2004	FED : coordinator : Sustainable Development PPS (Federal Public Planning Services) --> all the federal services should implement the system Brussels: Public bodies	14

Name of mitigation action	Included in with measures GHG projection scenario	Sector(s) affected	GHG(s) affected	Objective and/or activity affected	Type of instrument	Status of implementation	Brief description	Start year of implementation	Implementing entity or entities	Mitigation impact Estimate of mitigation impact (kt CO ₂ eq)
										2020
OB-B01 : Rational Use of energy in public buildings	Yes	Conservation of energy	CO ₂	Good practice shown by public administrations	Planning	implemented	RUE in public buildings Implementation Federal State Council of Ministers of Leuven of 18 March 2007	2004	FED : Public building (régie des bâtiments) ; FEDESCO (Federal Energy Services Company) (limited company under private law) ; SNCB-Holding (public enterprise) for station building Brussels: Public bodies	18
OB-B02 : Third Party Financing in public buildings	Yes	Conservation of energy	CO ₂	Good practice shown by public administrations	Planning	implemented	Establishment of a third party investor to improve the energy efficiency of public buildings (FEDESCO)	2004	FED : FEDESCO (Federal Energy Services Company) (limited company under private law)	Impact included in EC-C01
OB-B03 : Promoting rational energy use in local communities	Yes	Conservation of energy	CO ₂	Support to local initiatives that promote rational energy use	Economic	implemented	Promotion of RUE with the municipalities and communities (local authorities)	2004	Brussels: Public bodies, communes, hospitals, schools	NE
OB-C01 : Mobility plan for civil servants of different administrative organisations sharing a common office building	Yes	Transports	CO ₂	Increasing the use of mobility plans for civil servants of different administrative organisations sharing a common office building to show good practice by public administrations	Planning	implemented	Mobility plan	2004	Brussels: Public bodies, companies (>200 employees)	Impact included in TR-A01
OB-C02 : Promotion of alternative transport in public services	Yes	Transports	CO ₂	Good practice shown by public administrations	Information	implemented	Stimulating alternative use in transport/ free ride on public transport for members of administrations : free public transport is provided for journey to work in the Federal Public Service and in the Walloon Region.	2004	FED : Mobility and Transport FPS Brussels: Public bodies, companies (>200 employees)	NE

Name of mitigation action	Included in with measures GHG projection scenario	Sector(s) affected	GHG(s) affected	Objective and/or activity affected	Type of instrument	Status of implementation	Brief description	Start year of implementation	Implementing entity or entities	Mitigation impact Estimate of mitigation impact (kt CO ₂ eq)
										2020
OB-C03 : Promoting bicycle use in public services	Yes	Transports	CO ₂	Good practice shown by public administrations	Economic	implemented	Rewarding the use of bicycles in administrations : financial incentives, purchase of bicycles for service (in Federal public Service) + installation of showers for bicycle users	2004	FED : Finance FPS Mobility and Transport FPS Brussels: Public bodies, companies (>200 employees)	Impact included in TR-A03
OB-C04 : Promoting telework in public services	Yes	Transports	CO ₂	Increased teleworking by civil servants to show good practice by public administrations	Planning	implemented	Experiences of teleworking in administrations	2004	FED : Personnel and Organisation FPS	NE
OB-C05 : Eco-driving training in public services	Yes	Transports	CO ₂	Good practice shown by public administrations	Education	implemented	Eco-driving	2004	Brussels: STIB	Impact included in TR-B05
OB-C06 : Offsetting air travel GHG emissions in public administrations	Yes	Transports	CO ₂	Good practice shown by public administrations	Economic	implemented	Offsetting CO ₂ emissions for air transport	2004	FED : Health, Food Chain Safety and Environment FPS - SE B&CG LOG Brussels: Public bodies	NE
OB-C07 : Purchase of clean vehicles by public administrations	Yes	Transports	CO ₂	Good practice shown by public administrations	Economic	implemented	Purchase of clean vehicles	2004	FED : Personnel and Organisation FPS --> use by all FPSs Wallonia Brussels: Public bodies, STIB	Impact included in TR-C01 and TR-C02
Flexibility mechanisms	Yes	Cross cutting	CO ₂ , CH ₄ , N ₂ O, HFC, PFC	Purchase flexibility mechanisms during the Kyoto period to reduce emission levels.	Economic	implemented	Purchase flexibility mechanisms during the Kyoto period to reduce emission levels. Federal State: buys emission rights up to 12.2 million tons of CO ₂ equivalent during the period 2008-2012 through an annual fund of 25 million euro Flemish Region: 17 Mtonnes CO ₂ -eq in the Kyoto period (2008-2012) Brussels Capital Region : 0.155 Mt Walloon Region : 0.087 Mt	2004	FED : Health, Food Chain Safety and Environment FPS - DG Environment Brussels: IBGE	NE

Name of mitigation action	Included in with measures GHG projection scenario	Sector(s) affected	GHG(s) affected	Objective and/or activity affected	Type of instrument	Status of implementation	Brief description	Start year of implementation	Implementing entity or entities	Mitigation impact Estimate of mitigation impact (kt CO ₂ eq)
										2020
Ecocheques	Yes	Cross cutting	CO ₂	Promotion of ecological goods and services	Economic	implemented	Cheques as part of employees pay, intended to finance the acquisition of ecological goods and services. These cheques are exempt from taxes and social contributions.	2009	National Labour Council	58
Green loans	Yes	Conservation of energy	CO ₂	Providing access to finance energy-saving projects	Economic	implemented	A temporary measure, only applicable to loans awarded between 1 January 2009 and 31 December 2011.	2009	FED : Finance FPS	162

4.1.2 Emissions reductions per cluster

The estimated impact of the measures' implementation is set out in the CTF Table 3. These estimates are for the year 2009; 2015 and 2020 are provided as outlooks. Table B sets out these estimates for the 4 main areas: electricity generation, industry, buildings and transport.

4.1.3 Impact per gas

The vast majority of these measures affect the CO₂ emissions of the sectors concerned. Exceptions to this are as follows:

- In industry, specific measures taken to reduce N₂O emissions from industrial processes in the production of nitric acid and caprolactam;
- In waste treatment, the recovery of landfill gases (CH₄) and its use as biogas to generate electricity;
- In the distribution of natural gas (CH₄), the gradual replacement of old cast iron pipes with steel or polymer installations;
- Measures to inspect and maintain refrigeration systems in order to limit fluorinated gas leakages;
- In agriculture, managing nitrates to reduce N₂O emanations, and reducing the number of bovine livestock, which in turn reduces CH₄.

In Table B the evaluations of emissions reductions only cover CO₂ emissions except in the case of industrial N₂O emissions.

Actual emissions reductions in agriculture and in waste treatment are due to the measures that underpin the climate policy, but which are the result of implementing other sectoral policies such as the European agricultural policy and regional agricultural policies, as well as the regional waste management plans.

The impact of such policies can already be seen in the emissions inventories.

Table B. Impact of the measures per cluster

Domains of action		Clusters of measures		Estimate of mitigation impact (kt eq CO ₂)		
				2009	2015	2020
EP	Energy production and conversion	EP-A	Environment friendly energy production	654	9 405	13 303
		EP-B	Energy efficient electricity production			
EC	Energy conservation in buildings	EC-A	Cross-cutting issues	2	72	147
		EC-B	Residential sector	nd	992	1 828
		EC-C	Tertiary sector	55	286	488
IP	Reduce industrial emissions	IP-A	Energy efficiency in industry	2 119	2 242	3 876
		IP-B	Reduce F-gases emissions			
		IP-C	Reduce N ₂ O emissions in industrial processes	2 705	3 361	3 361
TR	Sustainable transport	TR-A	Promote the intermodality of transport means	1 514	2 447	3 517
		TR-B	Improve transport efficiency	17	37	75
		TR-C	Promoting environmentally friendly vehicles	41	186	167
		TR-D	Promoting biofuels	617	895	895
TOTAL				7 724	19 923	27 658

[see pages 91-92 of NC6 – 4.3.2 Review of the main PAMs]

[see page 91 of NC6 – 4.3.2 Review of the main PAMs

4.1.4 Long-term impacts

Many of the measures from the National Climate Plan concern support for investments whose effects will be sustained for several years, or even decades. The long-term impact of such measures is linked to the technical or economic service life of the equipment concerned.

This is especially the case for investment in infrastructure: building insulation, construction of new low-energy buildings and facilities, but also, for example, infrastructures that encourage modal shifts. Investments such as loading docks, broad gauge waterways, railway adaptations, and the purchase of rail machinery cover facilities with a service life in excess of 50 years.

For measures to upgrade the energy efficiency of heating and domestic hot water production facilities, average service life can be 20 years or more. This will also be the case for infrastructure that uses renewable energy sources, whose service life varies depending on the technology implemented.

In contrast, initiatives aimed at changing behaviour may need to be maintained or repeated over several years, at least until a real change in mentality across all sections of society is visible.

[see page 92 of NC6 – 4.3.2 Review of the main PAMs

4.1.5 Policies and measures that are no longer applied

For budgetary reasons, and since these are competences due to be transferred to the Regions as part of a constitutional reform currently underway, the Federal Government in 2012 abolished tax relief on energy-saving investments in private homes. Only roof insulation still benefits from such a scheme.

On 1 January 2012, the tax relief for “clean” vehicles was withdrawn for budgetary reasons.

[see page 93 of NC6 – 4.4 Policies and measures that are no longer applied

4.1.6 Impact of response measures

Actions taken are intended to contribute to preventing dangerous anthropogenic interference with the climate system. Adverse impacts of climate change are thus globally reduced when Annex I countries (and Belgium among them) take measures aiming to reduce GHG emissions through energy savings and the promotion of renewable energy sources. Furthermore, most of those actions contribute to reduce environmental pollution related to the use of fossil fuels.

Belgian policies and measures address not only fossil fuel combustion but also

emissions of all gases covered by the Kyoto Protocol, such as methane and nitrogen protoxide from agriculture and waste management or F-gases in refrigeration systems, thus ensuring a balanced distribution of efforts and limiting the potential impact of single measures that are too specific.

Belgium is a Member State of the European Union and, as such, designs and implements most of its policies in the framework of EC directives, regulations, decisions and recommendations. For instance, Belgium has implemented the European liberalisation of electricity and natural gas markets and is involved in the European Emissions Trading Scheme, all actions aiming to address market imperfections and to better reflect externalities in energy/CO₂ prices.

Belgium has suppressed subsidies supporting the use of coal and other fossil fuels for energy production. It also applies strict rules in accordance with EC recommendations for State aid to environmental and energy saving measures, in order to maintain an undistorted free competitive market across Europe. It has never taken any action nor expressed any recommendation in favour of one energy carrier over others and has always been very careful to collaborate equally with all actors of the energy production and distribution sectors.

The Belgian agricultural policies and the promotion of biofuels are developed within the European common policies. The new EC common agriculture policy now

tends to support quality products and environmental respect instead of large volumes of production, and should create market conditions more accessible to products from developing countries. Concerning biofuels, acknowledging that their development could create pressures on food prices and on land and forest management, especially in developing countries, the EC has established strict sustainability criteria which in particular include not supporting biofuels from land with high biodiversity value (primary forest and wooded land, protected areas or highly bio-diverse grasslands), or from land converted from wetlands, peatlands or continuously forested areas. It will also be very cautious about any broader environmental and social aspects such as air, water and soil quality and labour conditions.

Belgium also uses flexibility mechanisms, particularly in its participation in clean development mechanisms (CDM) projects. Actions in that domain include direct funding of projects or participation in carbon credit funds. The selection of CDM projects applies sustainability criteria based on the internationally recognized so-called “Gold Standards” checklist, addressing environmental aspects (including bio-diversity), social sustainability and development, quality of life and labour, and techno-economic aspects including employment and technological autonomy.

[see page 93 of NC6 – 4.5 Minimise adverse effects of response measures

4.2 Estimates of emission reductions and removals and the use of units from the market-based mechanisms and land-use change and forestry activities

Tables here refer to 2008-2012 period.

CTF Table 4. Report on progress

	Unit	Base Year	2008-2012	2010	2011	2012	Comments
Total (without LULUCF)	kt CO ₂ eq		513,621.53	131,920.68	120,308.10		
Contribution from LULUCF ^c	kt CO ₂ eq		887.95	214.77	202.96		see table 4(a) II
Market-based mechanisms under the Convention	number of units				50,099,783.00	46,168,337.00	
	kt CO ₂ eq				50,099.79	46,168.34	
Other market-based mechanisms	number of units						
	kt CO ₂ eq						

Figures related to the use of market mechanisms in Table 4 relate exclusively to the Belgian part of the EU target.

An additional column (2008-2012) has been introduced in the Table 4. It serves to highlight the CP1. Attention data for 2012 are not yet included.

Data of Table 4 don't count towards the 2020 target.

As KP Party, Belgium supplemented Table 4(a)II, but not Table 4(a)I.

CTF Table 4(a)II

GREENHOUSE GAS SOURCE AND SINK ACTIVITIES	BY (5)	Net emissions/removals(1)					Accounting Parameters(7)	Accounting Quantity (8)
		2008	2009	2010	2011	Total(6)		
		(Gg CO ₂ equivalent)						
A. Article 3.3 activities								
A.1. Afforestation and Reforestation								-1,114.28
A.1.1. Units of land not harvested since the beginning of the commitment period ⁽²⁾		-261.32	-272.79	-284.31	-295.86	-1,114.28		-1,114.28
A.1.2. Units of land harvested since the beginning of the commitment period ⁽²⁾								NO
A.2. Deforestation		505.36	498.97	499.08	498.82	2,002.23		2,002.23
B. Article 3.4 activities								
B.1. Forest Management (if elected)		NA	NA	NA	NA	NA		NA
3.3 offset ⁽³⁾							887.95	NA
FM cap ⁽⁴⁾							550.00	NA
B.2. Cropland Management (if elected)	0.00	NA	NA	NA	NA	NA	0.00	0.00
B.3. Grazing Land Management (if elected)	0.00	NA	NA	NA	NA	NA	0.00	0.00
B.4. Revegetation (if elected)	0.00	NA	NA	NA	NA	NA	0.00	0.00

CTF Table 4(b). Reporting on progress

	Quantity of units	kt CO ₂ eq	Comments
2011			
Kyoto Protocol Units ^d	50,099,783.00	50,099.79	
AAUs	49,457,875.00	49,457.88	(1 unit = 1 ton CO ₂ eq)
ERUs	75,453.00	75.45	(1 unit = 1 ton CO ₂ eq)
CERs	566,455.00	566.46	(1 unit = 1 ton CO ₂ eq)
tCERs	0.00	0.00	(1 unit = 1 ton CO ₂ eq)
ICERs	0.00	0.00	(1 unit = 1 ton CO ₂ eq)
Units from market-based mechanisms under the Convention ^{d,e}			
Units from other market-based mechanisms ^{d,e}			
Total	50,099,783.00	50,099.79	Disaggregation of use of KP units at annual level is not relevant for the first commitment period of the KP.
2012			
Kyoto Protocol Units ^d	46,168,337.00	46,168.34	
AAUs	39,937,629.00	39,937.63	(1 unit = 1 ton CO ₂ eq)
ERUs	550,873.00	550.87	(1 unit = 1 ton CO ₂ eq)
CERs	5,679,835.00	5,679.84	(1 unit = 1 ton CO ₂ eq)
tCERs	0.00	0.00	(1 unit = 1 ton CO ₂ eq)
ICERs	0.00	0.00	(1 unit = 1 ton CO ₂ eq)
Units from market-based mechanisms under the Convention ^{d,e}			
Units from other market-based mechanisms ^{d,e}			
Total	46,168,337.00	46,168.34	Disaggregation of use of KP units at annual level is not relevant for the first commitment period of the KP.

2011 data are conform with 2012 SEF [Table 2(a) Annual internal transaction] submission over Retirement.

2012 data are conform with 2013 SEF [Table 2(a) Annual internal transaction] submission over Retirement.

NB : Tables over Report on Progress' information relating to market based Mechanisms are partial because they concern only the ETS

5. Projections

5.1 Projections

This report presents a “with existing measures” (WEM) scenario, encompassing currently implemented and adopted policies and measures and a “with additional measures” (WAM) scenario, encompassing planned policies and measures. Furthermore it reports on sensitivity analyses for the “with existing measures” scenario.

The national projections reported in this chapter are the sum of bottom-up projections developed by the three regions (Flanders, Wallonia, Brussels-Capital) as part of their respective climate strategies. Assumptions and key parameters were harmonised among the regions. Some parameters remain different, to reflect the specificities and the activities found in each region more accurately.

The Federal Planning Bureau prepared a top-down projection at country level for the “with existing measures” scenario. This top-down projection has been used to validate the regional bottom-up projections.

(NC6 – page 94 – 5.1.1 Introduction)

The “with existing measures” scenario indicates the likely evolution of greenhouse gas emissions in Belgium with cur-

rent policies and measures. This scenario includes all policies and measures adopted at the end of 2012 by the federal and regional governments to reduce greenhouse gas emissions.

5.1.1 Projections by sector

The energy sector
(NC6 – page 96-97 – 5.1.3.1)

The energy industries represented 18% of the Belgian greenhouse gas emissions in 2011. Assumptions regarding net electricity import, energy and CO₂-prices and on the evolution of the electricity production park determine to a large extent the evolution of emissions over the projection period.

The 2013 projections for electricity production take into account:

- assumptions (calculations) on the evolution of the electricity demand (in the different sectors);
- assumptions on the evolution of the electricity production park;
- assumptions on the import of electricity

The assumptions show an annual increase of the electricity demand of 5.1%

between 2010 and 2020. Trans-boundary electricity trading is considered exogenous in the modelling of the electricity production.

The with measures scenario integrates the decommissioning of nuclear power plants once they turn 40 years old, in conformity with the Belgian Law on the progressive phase-out of nuclear energy for industrial electricity production which was consented by the Federal Government on 31 January 2003. In this scenario, the decommissioned nuclear plants are mostly replaced by new CCGT-power plants. A large part of the base demand (base load) is met by nuclear plants, CHP installations and renewable energy (wind and biomass).

The share of renewables in the total domestic electricity production runs up to 6.3% in 2010 and 27.4% in 2020. This share of 6.3% in 2010 meets the indicative target of 6% in 2010 set by the European Directive 2001/77/EC.

The share of gas in the total domestic electricity production runs up from 34.7% in 2010 to 36.8% in 2020, while the share of nuclear declines from 52.1% to 33.5%. This increase of the share of gas is the result of an increase in electricity demand and the partial closure of the first nuclear plants. The production of the closed nuclear plants is mainly replaced by combined cycle gas turbines and renewable energy sources.

Industry (NC6 – page 97-99 – 5.1.3.2)

Industrial emissions (energy and process related) accounted for 29% of total Belgian greenhouse gas emissions in 2011. Projections of energy use in the industry sector are based on assumptions of activities and sometimes also the energy intensity (amount of energy used per unit of activity). These assumptions differ between the regions and reflect the differences in industrial activities.

In Flanders, for **companies participating in the new Flemish energy covenant** energy consumption and CO₂ emissions have been modelled taking into account the expected energy efficiency improvement of the covenant. For the **other companies** (not participating in the energy covenant) energy consumption and CO₂ emissions have been calculated assuming the impact of the recently adopted Directive 2012/27/EU on energy efficiency. For the other companies, not participating in energy covenants, energy consumption and CO₂ emissions have been calculated assuming the impact of article 7 of the recently adopted Directive 2012/27/EU on energy efficiency.

In Wallonia, assumptions taken to establish emissions projections takes into account activity growth rates between 2010 and 2015 and annual energy efficiency improvements.

Large energy consumers are modelled at installation level. This includes major iron and steel installations, clinker and

lime kilns and flat glass ovens. Between 2010 and 2015, rates of change of activities are based on estimates of market growths or perspectives of industrial sectors, investment projects and equipment closures that are announced. Expected structural changes are taken into account when known.

All major industries are involved in industry-wide agreements whereby they are committed to improve their energy/CO₂ efficiency by 2010/2012. Industry-wide agreements are implemented until 2012. New agreements for the period 2012-2020 are still under negotiation and not yet signed. Therefore they are not considered in the WEM scenario.

In both regions, projections of process emissions are mainly linked to growth rates of activity and implementation of reduction measures in some sectors, such as those that were implemented in 2011 in Wallonia for the chemistry sector, resulting in a sharp drop in N₂O emissions. Comparable measures were implemented previously in Flanders in the chemical sector.

The F-gas emission projections are drawn up from the model developed in the context of a study.

The buildings sector (NC6 – page 99-100 – 5.1.3.3)

In 2011 the building sector accounted for nearly 19% of the total Belgian greenhouse gas emissions.

The number of households and climate assumptions, along with implemented policies and measures, are the main drivers for projected emissions in the residential sector. Policies and measures differ for new and existing dwellings. The climate regulations and measures considered for the projections, such as the EC directive on energy performance of buildings and use of renewable energy (solar boilers and heat pumps) are presented in chapter 4 of the Belgian NC6, 'Policies & Measures'.

The share of natural gas in the total energy consumption of the residential sector rises at the expense of heating oil.

In the tertiary sector, projections are based on the expected evolution of activity of the different subsectors and the implementation of energy saving measures in each of the regions.

The agricultural sector (NC6 – page 100 – 5.1.3.4)

The share of agricultural emissions, including combustion emissions, amounted to 9.6% of total Belgian greenhouse gas emissions in 2011.

Greenhouse gas emissions in the agricultural sector mainly consist of CH₄ and N₂O emissions originating from animal husbandry and emissions from agricultural soils.

The projected livestock numbers are the main drivers of the projected trends.

The transport sector (NC6 – page 100 – 5.1.3.5)

Transport emissions accounted for 22.5% of Belgium's greenhouse gas emissions in 2011. Projections are based on a bottom-up approach taking into account the expected number of kilometres travelled by different transport modes and on assumptions regarding the distribution of vehicles. The evolution in travelled kilometres is based on historical trends and on assumptions about the effect of policies regarding modal shift. The main driver in this sector is the expected increase in road transport. In Flanders, passenger car transport stabilises between 2010 and 2020 but the road freight transport is expected to increase by 11% in 2020 over 2010. In Wallonia, growth is estimated at 1.8% per year until 2020 for freight transport, while the growth of mobility for passenger cars is 0.9% until 2020. In the Brussels Capital Region, road transport emissions are expected to increase by 0.55% per year until 2016; once the implementation of the RER (regional express network improving public transportation) starts, the tendency is reversed and an annual average decrease of 0.22% is expected.

The waste sector (NC6 – page 100 – 5.1.3.6)

This sector accounted for 1.3% of total greenhouse gas emissions in Belgium in 2011 (mainly SWDS and wastewater treatment plants). Chapter 4 of the Belgian

NC6 describes the policies and measures implemented to reduce these emissions further.

Land use change and forestry (NC6 – page 100 – 5.1.3.7)

Land use change and forestry is a net carbon sink in Belgium. Forests are a major sink of carbon and is rather stable over time while other sectors are sources (with the exception of grassland and wetlands in recent years). The average annual CO₂ absorption is approximately -1000 Gg CO₂ eq. (-1268 Gg CO₂ eq. in 2011). No specific projections are available for this sector except for forest management, where a business as usual scenario in order to draw up the Forest management reference level, which was submitted to the UNFCCC in 2011. Those projections were calculated by the Joint Research Centre of the European Commission (JRC) in close collaboration with the relevant Belgian administrations, taking into account inter alia the historical removals or emissions from forest management, age class structure of the forest, policies and measures implemented before mid-2009 and forest management activities.

The international bunker fuels (NC6 – page 100 – 5.1.3.8)

Emissions from international aviation have increased by 38% since 1990, while emissions from maritime transport have risen by 90% (with a dip after 2009 due to

economic crisis and a revival since 2011). The emissions are calculated on the basis of sold fuel quantities. The projections reported are those calculated by the HERMES model.

5.1.2 Models used (NC6 – page 100 – 5.1.3.8)

Three regional models are used for the projections.

A new Flemish energy and greenhouse gas simulation model was developed in 2011 to build short term projections to be used in the Flemish Climate Policy Plan 2013-2020. The simulation model is a projection model for energy demand and greenhouse gas emissions that covers most of the relevant emission sectors (energy sector, industry, residential and commercial buildings).

This simulation model follows a “bottom-up” approach, i.e. it quantifies energy consumption and GHG emissions based upon activity variables (expressed as far as possible in physical units) and considers the other main determining factors of energy demand. (NC6 – page 100 – 5.1.4.1)

In Wallonia, EPM (Energy/Emissions Projection Model) is a projection model for energy demand and atmospheric emissions that covers all relevant emission sectors (energy sector, industry, residential, commercial, transport). EPM is a simulation model, of the “bottom-up” type, i.e. explaining energy consumption and GHG

emissions through activity variables expressed as far as possible in physical units with a detailed representation of emission sources and the main factors determining the evolution of energy demand and the various types of emissions. (NC6 – page 100-101 – 5.1.4.2)

The Brussels Institute for Environmental Management (IBGE/BIM) has developed its own projection model for energy demand and atmospheric emissions from stationary sources (residential, tertiary, industry and energy sector). As bottom-up type model, changes in consumption of the several energy carriers used in the Brussels-Capital Region (natural gas, light oil, propane/butane, coal, electricity, wood, solar and heat pump) and their associated emissions (CO₂, CH₄, N₂O, NO_x, CO, NMVOC, SO_x, NH₃, PM) are determined by the evolution of parameters that define the consumption of each sector. (NC6 – page 101 – 5.1.4.3)

HERMES is the macrosectoral model used by the Belgian Federal Planning Bureau for its national short and medium term forecasts. HERMES is an annual econometric models based on time series analysis. Since disaggregation is a key feature of the model, it is possible to describe shifts among the different sectors or branches; it also makes it possible to highlight the various effects of measures or external shocks on separate branches. (NC6 – page 101 – 5.1.4.4)

5.1.3 Aggregated projections (NC6 – page 104 – 5.1.5.5)

The total greenhouse gas emissions in the ‘with existing measures’ scenario decreases from **131.6 Mtonnes CO₂-eq** in 2010 to **122.0 Mtonnes CO₂-eq** in 2015 and to **120.6 Mtonnes CO₂-eq** in 2020. These projections do not include emissions nor removals from LULUCF.

5.1.4 Sensitivity analysis of the ‘with existing measures’ greenhouse gas emission projections (NC6 – page 105 – 5.1.7)

Sensitivity analyses are performed for some important parameters such as number of degree-days, nuclear phase out, without however taking indirect effects into account.

Number of degree-days (NC6 – page 105-106 – 5.1.7.1)

Climate plays an important role in energy consumption for the residential and tertiary sector. The “with existing measures” scenario is based on a mild climate that has been established considering the number of degree-days. For this report, it is equivalent to the average values for the period 2002-2011, namely 1819 degree-days. To identify the impact on the energy consumption of a colder and warmer weather, the sensitivity analysis is made for two scenarios:

- Cold climate: 1946 degrees-days (Average of 1985-2009).
- Warm climate: 1538 degree-day (2011)

In case the future climate is milder (1538 degree days, as observed in 2011), CO₂ emissions from the buildings sector would be 1743 kt CO₂ lower in 2020. In case of colder climate (1946 degree-days, average of the past 25 years, as used in the efficiency action plan) emissions would be 746 kt CO₂ higher. These values represent respectively 2.5 % and 1.1% of the Annual Emission Allocation for 2020. Hence, climate will have a significant impact on the future commitments.

Nuclear phase out (NC6 – page 106 – 5.1.7.2)

The “with existing measures” scenario integrates the Belgian Law on the progressive phase-out of nuclear energy from 2015 to 2025. On January 31, 2003, the Belgian federal parliament voted a law that promulgates the gradual phase-out of nuclear fission energy for commercial electricity production. The law prohibited the construction of new nuclear power plants and set a 40-year limit on the operational period of existing plants. However, in 2012, the Energy State Secretary and the Federal Government proposed an adapted scheme for the nuclear phase out and decided in 2012 to postpone by 10 years the shutdown of Tihange 1 from 2015 to 2025. This decision has not yet been confirmed by law. The first reactor to be shut down will be Doel 1 in February 2015 followed by

Doel 2 in December 2015. The last Belgian nuclear power reactor will be shutdown in 2025. In both scenarios, the nuclear power plants will be mostly replaced by new CCGT-power plants and additional renewable production capacity. The differences between both schemes by 2020 are limited. In the new proposal the Tihange 1 reactor’s operation is extended until 2025, while its shutdown was initially foreseen in 2015 according to the 2003 legislation. In case nuclear phase-out will follow the 2003 law, total CO₂ emissions would be about 443 kt CO₂ higher in 2015 and 1330 kton CO₂ higher in 2020 compared to the phase-out depicted in the 2012 proposal.

5.1.5 “With additional measures” greenhouse gas emission projections (NC6 – page 106-107 – 5.1.8)

The Belgian federal and regional governments are in the process of defining measures to meet the renewable energy and non-ETS objectives for 2020 of the European Energy Climate Package. The scenario “With additional measures” scenario only integrates additional measures regarding renewable energy production and measures reducing greenhouse gas emissions in the non-ETS sectors. Emissions related to fossil fuel consumption in the ETS-sector will, from 2013 onwards, be regulated by the harmonised EU ETS cap. It is important however to underline that the impact of the additional measures, as estimated here, is the result of a first anal-

ysis that needs to be supplemented with socio-economic feasibility analyses.

The additional measures represent an estimated total additional reduction of about 1.9 Mtonnes CO₂-eq in 2020.

5.1.6 Conclusion

Overall emission levels (NC6 – page 107 – 5.1.9.1)

The total greenhouse gas emissions in the “with measures” scenario decreases from **131.6 Mtonnes CO₂-eq** in 2010 to **122.0 Mtonnes CO₂-eq** in 2015 and to **120.6 Mtonnes CO₂-eq** in 2020. These projections do not include emissions nor removals from LULUCF.

Projections with the macro-economic model suggest a decrease in emissions between 2010 and 2015 (**123.5 Mtonnes CO₂-eq**), but with an increase in 2020 (**127.2 Mtonnes CO₂-eq**).

Uncertainties do exist concerning exogenous variables such as economic growth, climate conditions, electricity imports and closure of the nuclear plants. Their level influences the resulting greenhouse gas emissions, notably in the sectors covered by the EU ETS.

The proposed additional measures show an additional reduction potential of 1.9 Mtonnes in 2020, reducing the total CO₂-eq in the “with additional measures” scenario to **118.8 Mtonnes CO₂-eq**.

Comparison with the Kyoto target 2008-2012 (NC6 – page 107 – 5.1.9.2)

The annual average quantity of assigned amount units for Belgium in the Kyoto period equals 134.8 million AAUs.

The emissions from the inventory years 2008-2011, together with the first indications for 2012, suggest that greenhouse gas emissions in Belgium in the Kyoto period 2008-2012 will be below the Kyoto target.

However, taking into account the internal burden-sharing in Belgium and the as-

signed amount units converted into quotas and allocated under the ETS, GHG emissions below the target do not necessarily mean that compliance would be ensured from a national registry point of view. This issue is analysed hereunder in section 5.3.

Comparison with the 2013-2020 Target (NC6 – page 107 – 5.1.9.3)

A greenhouse gas emission limit of -20% in 2020 compared to 1990 greenhouse gas emissions levels was set for Belgium in Decision 1/CMP8. However, this

target will be subject to a burden-sharing between EU member States, under Article 4 of the Kyoto Protocol. Hence, it seems too early to comment on the projected emissions in 2020.

Within the internal EU policy⁵, the Belgian targets are -21% for the ETS sector and -15% for the non-ETS sector. Taking into account the expected effect of the adjustments pursuant to Article 10 of the Effort Sharing Decision, this results in an emission reduction objective for the non-ETS sectors in Belgium of 66.7 Mt CO₂-eq. As the current projected emissions for the non-ETS sector are 75.7Mt CO₂-eq., existing and currently envisaged additional measures would not be sufficient to reach the non-ETS target in 2020. However, the internal Belgian burden sharing of the ESD targets has not been adopted yet, so no final conclusions can be drawn for the time being from a regional nor national point of view.

Toward a low-carbon society (NC6 - page 202, 9.4.8)

The Walloon Air and Climate Agency organised a day in February 2012 to present two studies it had commissioned: 'Vers une Wallonie Bas-carbone' (Towards a low-carbon Wallonia) and 'L'adaptation au changement climatique en Wallonie' (Adaptation to climate change in Wallonia). This day was open to the public, administrations, consultancies, etc. The aim was to show that it is possible to achieve 80% to 95% reductions in greenhouse gas

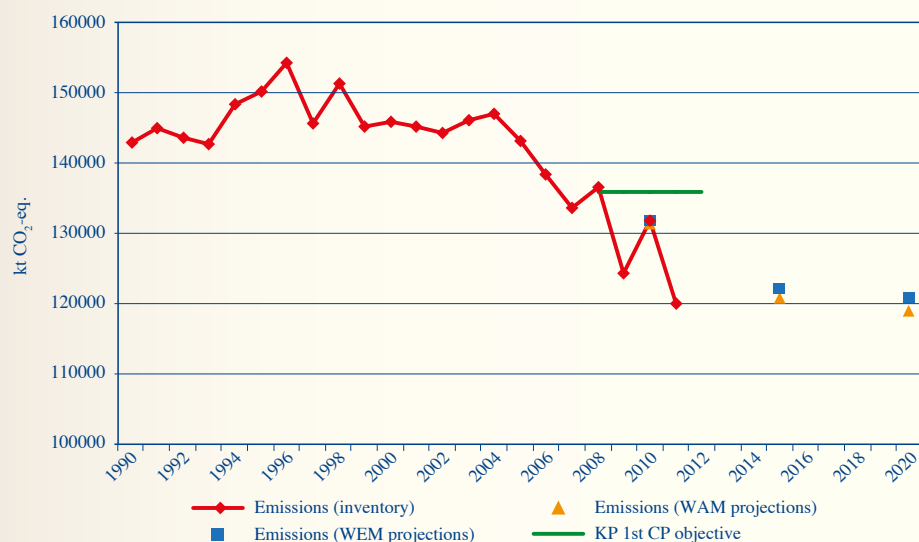
emissions by 2050 and how, through various scenarios, this reduction is possible. These scenarios and their impacts have been made available on line via the web calculator on <http://www.walloniebascarbonate2050.be/>. The second study shows the consequences of global warming up to 2080. Two publications containing the results of these studies were also distributed. A first interdisciplinary Congress on sustainable development, organised by the Public Service of Wallonia and the French-speaking universities, was held in Namur on 31/1 and 1/2/2013. (<http://www.congrestransitiondurable.org/>)

The Federal Climate Change Section also launched a project on the transition to a low-carbon Belgian society by 2050 ('2050 Low Carbon Belgium'). This project covers various themes which are particularly important for the transition to a low-carbon society. The core of this project is the study 'Scenarios for a Low Carbon Belgium by 2050', in which various scenarios have been developed to reduce Belgian emissions by 80% to 95% compared to the 1990 figures by 2050. These scenarios were devised and analysed via a transparent open-source model based on intensive consultation with Belgian and foreign experts and stakeholders.

To make this theme and the results of this exercise more accessible to the general public, the Section also:

⁵ Effort-Sharing Decision EC 406/2009 and other legislative acts.

Figure A. Total Belgian GHG emission projection in the WEM and WAM scenario (ktonnes CO₂ eq)



- drew up a brochure in 3 language versions (EN, NL, FR), presenting the results of the study ‘Scenarios for a Low Carbon Belgium by 2050’ in a comprehensible manner;
- developed a web tool to visualise all possible scenarios and their implications in the form of graphics. It offers users the possibility of devising their own scenario by themselves adapting the various parameters and driving forces which have an impact on greenhouse gas emissions. Through this, the tool allows greater insight to be obtained into the various routes towards a low-carbon society;
- created a heading on the project ‘2050 Low Carbon Belgium’ on the climate website (www.climatechange.be/2050), including the results of the study ‘Scenarios for a Low Carbon Belgium by 2050’, the summarising brochure, the interactive web tool and graphical mapping (with additional information) of all local, regional and provincial initiatives in Belgium and Europe in the context of the transition to a low-carbon society.

5.2 Assessment of aggregated effects of policies and measures (NC6 – page 108 – 5.2)

According to the UNFCCC reporting guidelines (para 41) the total effect of policies and measures can be calculated as the difference between the “with measures” and the “without measures” scenarios, or as an aggregation of the individual effect of each significant policy and measure.

Belgium did not establish a “without measures” scenario since its climate policy is in place for many years now and it has become difficult to assess the way energy use and greenhouse gas emissions would have evolved without this policy.

Chapter 4 of the national communication indicates the reduction effect of (a combination of) some existing policies and measures, for which such an effect could be estimated. Those impacts were calculated using a bottom-up approach. Although this analysis paid attention to the possible interlinkages between the different measures, double counting and overlap are still possible while the effect of several other measures could not be estimated.

Moreover, potential emission reductions represented by these measures, are estimated with respect to a reference situ-

ation which is not evaluated (the so called “scenario without measures”). The aggregated reduction effect should therefore be interpreted with care. In chapter 4 of the National Communication, it is estimated around 19.75 Mtonnes CO₂-eq in 2015 and 27.3 Mtonnes CO₂-eq in 2020.

Those emission reduction potentials are mostly due to the implementation of existing measures that are parts or extensions of elements of the National Climate Plan (2009-2012).

Indeed, as already mentioned in chapter 4 of the National Communication, Belgium is currently in a transitional position as several authorities are still in the process of establishing their climate policy towards 2020. Many new ideas are under discussion, but cannot yet be considered as “planned” as long as they have not been submitted to the respective Governments.

Only a few measures can be considered as contributing to the “with additional measures” scenario, as they are planned in the framework of several action plans upon which the climate policies of Regions partly rely. For instance :

In Flanders, the schedule of introduction for progressively stricter energy performance requirements for of buildings (applicable to new constructions and thorough renovations) is defined in the 2013-2020 climate plan. It is thus an existing measure. However, stricter requirements are envisaged and can be considered as additional measures

In Wallonia:

- several future stages and a calendar for the progressively stricter energy performance requirements for of buildings (new constructions and thorough renovations), have not yet been officially defined;
- the extension to 2020 of Energy/CO₂ efficiency agreements in industry, whose principle is accepted by the Regional Government, conventions with industries and their federations remain to be signed.

Among the global reduction potential of 27.3 Mtonnes CO₂-eq in 2020, only 1.87 Mtonnes CO₂-eq are as yet due to “additional measures”.

5.3 Supplimentarity relating to mechanisms under Article 6, 12 and 17, of the Kyoto Protocol (NC6 – page 108-109 – 5.3)

The EU Emissions Trading Scheme (ETS), besides being a very important policy instrument for the energy and industrial sectors, is also an important factor in determining the amount of flexibility mechanisms to be used by the federal and regional governments. The National Allocation Plan 2008 – 2012 sets the quantity of allowances allocated to sectors covered by the ETS. The allowances, EUAs which are converted AAUs, are allocated to the installations and are therefore no longer available to governments to cover the emissions outside the ETS. The average annual allocation during the Kyoto Period to the installations covered by the ETS amounts to 58.5 Mtonnes CO₂-eq, irrespective of the actual emissions by these installations during that period. This implies that the annual average quantity of allowances for Belgium in the Kyoto period (134.8 Mtonnes CO₂-eq) is translated into a target for the sectors not covered by the EU ETS. This “non-ETS”-target equals 76.3 Mtonnes CO₂-eq (134.8 Mtonnes CO₂-eq – 58.5 Mtonnes CO₂-eq).

At the national level, the average non-ETS emission level in the Kyoto

first commitment period is estimated to be 78.847 Mtonnes CO₂-eq⁶ per year or 2.542 Mtonnes CO₂-eq above the annual target for these sectors (see figure B). The total intended use of flexible mechanisms at government level is estimated at 29.5 Mtonnes CO₂-eq for the whole first commitment period of the Kyoto Protocol (see table C). This amount reflects the impacts of the national burden sharing agreement.

For more information see Chapter 5 of NC6.

⁶ The total overall estimated emission level in the period 2008 – 2012 is 635.218 Mtonnes of which 240.983 Mtonnes is covered by the EU ETS (scope 08-12). The difference between the two is therefore the total emissions in the period 2008 – 2012 not covered by the ETS and these emissions amount to 394.235 Mtonnes. The average annual value is this total divided by 5.

Table C. Supplimentarity during the first commitment period (2008 – 2012): use of flexible mechanisms

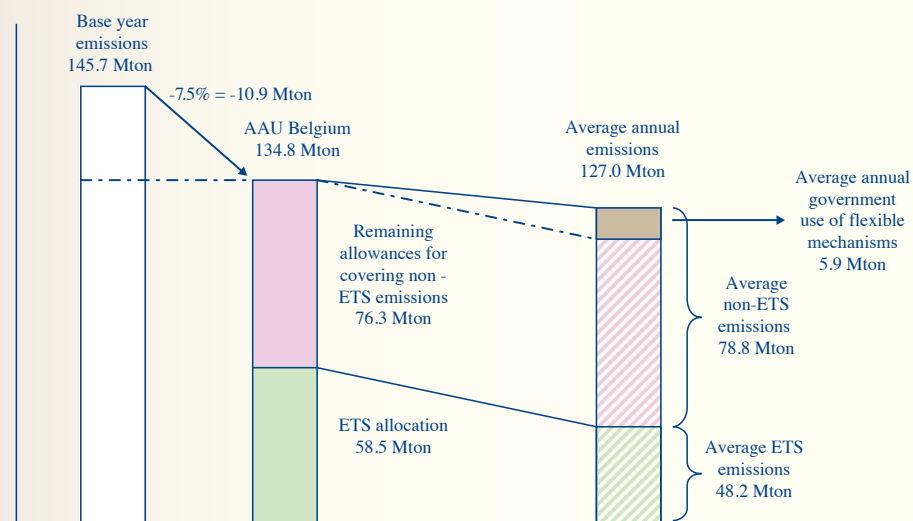
Reduction target in absolute numbers (2008 – 2012)	kt CO ₂ -eq	No information (No Without Measures Scenario)
Initial Assigned Amount Units (2008 – 2012) of which allocated to ETS of which available for non-ETS	kt CO ₂ -eq	673 995 292 472 381 523
Actual emissions (2008 – 2012, 2012 is estimated for non-ETS based on the 2011 emissions, corrected for the degree-days) of which ETS of which non-ETS	kt CO ₂ -eq	635 218 240 983 394 235
Difference AAUs – emissions for ETS for non-ETS	kt CO ₂ -eq	38 777 51 489 -12 712
Planned Government use of flexible mechanisms*,**	kt CO ₂ -eq	29 449
Use of flexible mechanisms in EU ETS*** CDM JI	kt CO ₂ -eq	19 065 13 667 5 398
Total use of flexible mechanisms		48 514
Emission reduction by flexible mechanisms (compared to target)	%	N.a.
Share of flexible mechanisms in covering the emissions for ETS for non-ETS	%	7.7% 7.9% 7.5%

* The planned use of flexible mechanisms at government level (to cover non-ETS emissions) reflects the impact of the national burden sharing agreement.

** As the purchase of Kyoto Units is still ongoing, no data per type of Kyoto unit can be provided.

*** Source: Belgian Greenhouse Gas Registry

Figure 5.3 Overview of internal reductions and use of flexible mechanisms to meet the Kyoto target*



* The planned use at government level of flexible mechanisms (to cover non-ETS emissions) reflects the impact of the national burden sharing agreement.

Bottom-up 2030 projections for Belgium are not available for the time being. However some specific studies are available, such as the report “EU Energy, transport and GHG Emissions – Trends to 2050 – Reference scenario 2013”⁷, where data regarding Belgium up to 2050 and based on PRIMES model are available on pages 92 and 93. The scenario simulates the energy balances and GHG emission trends for future years under current policies and implementation of RES and non-ETS targets in 2020 with use of flexibility mechanisms. Nevertheless, these data were not included in CTF table 6 because the PRIMES methodology is not consistent with the bottom-up approach currently reported by Belgium.

⁷ Report available on <http://e21.2c.europa.eu/transport/18.6media/publications/d16.9oc/trends-to-2050-u14.8pdate-2013.pdf>

CTF Table 5. Summary of key variables and assumptions used in the projections analysis

Key underlying assumptions	Unit	Historical					Projected				
		1990	1995	2000	2005	2010	2011	2015	2020	2025	2030
Population	Capita	9,947,782.00	10,130,574.00	102,390,85.00	104,458,52.00	10,839,921.00	10,951,266.00	11,419,014.00	11,888,374.00	NE	NE
Number of households	Thousand	4,006.57	4,122.45	4,284.20	4,488.14	4,656.38	4,703.51	5,065.00	5,365.00	NE	NE
Electricity demand	TWh					91.40		93.10	96.10	NE	NE
Net import (balance export – import) electricity	TWh					4.00		4.00	1.60	NE	NE
Electricity production	TWh			84.01	87.02	87.40		89.10	94.50	NE	NE
Total gross electricity generation	GWh					87,440.09		89,065.24	94,499.55	NE	NE
Dairy Cattle	1000 heads	839.00	684.00	581.00	495.00	462.00	459.78	581.00	549.00	NE	NE
Non-dairy Cattle	1000 heads	2,410.00	2,602.00	2,412.00	2,169.00	2,165.00	2,108.99	1,989.00	2,043.00	NE	NE
Swine	1000 heads	6,700.00	7,268.00	6,895.00	6,161.00	6,626.00	6,583.40	6,806.00	6,786.00	NE	NE
Poultry	1000 heads	27,167.00	33,381.00	36,860.00	32,037.00	32,577.00	32,280.47	33,592.00	33,363.00	NE	NE
Energy demand (total without nuclear)	TJ	1,503,786.87	1,630,408.88	1,677,189.43	1,712,119.11	1,704,136.98	1,546,492.06	1,717,449.37	1,735,145.17	NE	NE
Energy Industries (without nuclear)	TJ	330,515.61	353,494.70	363,637.46	393,997.92	414,550.87	360,734.24	364,872.63	392,838.31	NE	NE
Industry	TJ	481,030.64	501,700.98	522,921.10	482,253.85	419,827.52	412,799.91	445,139.63	448,877.04	NE	NE
Commercial (Tertiary)	TJ	66,754.88	87,233.17	94,768.94	102,091.72	110,065.38	86,474.20	138,087.82	133,179.25	NE	NE
Residential	TJ	303,987.59	340,424.76	325,156.33	341,627.75	340,693.47	270,133.32	287,726.34	271,556.67	NE	NE
Transport	TJ	282,608.17	308,959.67	336,353.03	356,895.60	382,800.99	380,516.23	337,880.55	339,649.93	NE	NE
Municipal solid waste generation	PJ					4,443.40		4,443.40	4,443.40	NE	NE

CTF Table 6. Information on updated greenhouse gas projections

GHG emissions projections	Unit	GHG emissions and removals						With measures		With additional measures		
		Base year (1990)	1990	1995	2000	2005	2010	2011	2020	2030	2020	2030
Sector												
Energy	kt CO ₂ eq		112,375.42	116,461.41	116,993.79	116,235.48	108,155.67	97,698.27	97,377.86	NE	95,833.39	NE
Transport	kt CO ₂ eq		20,815.25	22,893.60	24,868.50	26,353.60	27,128.30	27,047.07	27,010.84	NE	27,010.84	NE
Industry/industrial processes	kt CO ₂ eq		15,778.52	19,229.18	15,664.55	15,327.00	12,224.79	11,288.60	11,964.83	NE	11,964.83	NE
Agriculture	kt CO ₂ eq		11,440.21	11,531.62	10,671.68	9,586.85	9,560.48	9,496.92	9,573.38	NE	9,573.38	NE
Forestry/LULUCF	kt CO ₂ eq		-913.71	-717.76	-681.79	-1,293.60	-1,357.23	-1,268.35	-2,499.00	NE	-2,499.00	NE
Waste management/waste	kt CO ₂ eq		3,412.92	3,132.19	2,597.30	2,051.16	1,768.53	1,613.18	1,494.92	NE	1,494.92	NE
Fugitive emissions from fuels (CRF 1B)	kt CO ₂ eq		942.50	627.93	631.48	530.73	548.67	500.82	543.63	NE	543.63	NE
Use of N ₂ O for Anaesthesia (CRF 3)	kt CO ₂ eq		213.41	200.18	213.52	212.36	211.20	211.13	213.97	NE	213.97	NE
Aviation	kt CO ₂ eq											
Gases												
CO ₂ emissions including net CO ₂ from LULUCF	kt CO ₂ eq		118,169.09	123,681.14	124,526.45	124,257.23	113,426.83	103,033.59	103,193.29	NE	103,441.50	NE
CO ₂ emissions excluding net CO ₂ from LULUCF	kt CO ₂ eq		119,096.48	124,427.72	125,256.16	125,617.23	114,878.25	104,472.11	105,306.29	NE	103,441.50	NE
CH ₄ emissions including CH ₄ from LULUCF	kt CO ₂ eq		9,831.94	9,414.20	8,432.58	6,933.03	6,641.39	6,482.76	6,061.98	NE	6,061.98	NE
CH ₄ emissions excluding CH ₄ from LULUCF	kt CO ₂ eq		9,831.46	9,414.18	8,432.58	6,933.03	6,641.39	6,476.50	6,061.98	NE	6,061.98	NE
N ₂ O emissions including N ₂ O from LULUCF	kt CO ₂ eq		10,889.94	11,749.37	11,084.31	9,226.92	8,362.38	7,232.05	7,204.32	NE	7,204.32	NE
N ₂ O emissions excluding N ₂ O from LULUCF	kt CO ₂ eq		10,876.74	11,720.56	11,036.40	9,160.52	8,268.19	7,068.14	7,204.32	NE	7,204.32	NE
HFCs	kt CO ₂ eq		NA	451.73	943.28	1,461.82	1,936.25	1,996.06	1,807.88	NE	1,807.88	NE
PFCs	kt CO ₂ eq		1,753.32	2,335.24	360.90	154.27	85.44	178.99	142.62	NE	142.62	NE
SF ₆	kt CO ₂ eq		1,662.49	2,205.16	111.52	85.97	111.15	116.30	101.80	NE	101.80	NE
Total with LULUCF	kt CO ₂ eq		142,306.78	149,836.84	145,459.04	142,119.24	130,563.44	119,039.75	118,511.89	NE	118,760.10	NE
Total without LULUCF	kt CO ₂ eq		143,220.49	150,554.59	146,140.84	143,412.84	131,920.67	120,308.10	120,624.89	NE	118,760.10	NE

6. Provision of financial, technological and capacity-building support to developing country Parties

Belgium presents its provision of financial, technological and capacity-building support to Parties not included in Annex I to the Convention (non-Annex I Parties) with regard to climate change mitigation and adaptation for the years 2011-2012. Transparency and consistency with the information provided in the sixth National Communication is aimed for as Belgium recognises the importance of transparent reporting as tool for learning lessons and as key for building trust.

In 2011-2012, Belgium continued to support adaptation and mitigation activities in developing countries by mainstreaming climate objectives through its official development assistance (ODA) as this is

crucial for increasing climate-resilient and low-GHG emission investments. Furthermore, Belgium provided climate finance as its contribution to the Fast-Start financing collective commitment by developed countries to provide new and additional resources, approaching USD 30 billion for the period 2010-2012. The Fast-Start finance was partially as ODA and partially channelled through other sources.

Resources provided by Belgium during the Fast-Start finance period are new and additional as it is climate specific finance, complementary to budgeted ODA finance. Application has been specific to each Belgian entity.

NATIONAL APPROACH FOR TRACKING OF THE PROVISION OF FINANCIAL, TECHNOLOGICAL AND CAPACITY-BUILDING SUPPORT TO NON-ANNEX I PARTIES

There are several approaches used by Belgium to track Fast-Start finance and climate support through ODA.

As the Conference of the Parties invited developed country Parties to submit information on the resources provided to achieve the Fast-Start financing goal, Belgium provided its annual data through the EU Accountability Report on Financing for Development. The EU Fast-Start finance report with an extensive list of specific examples of Fast-Start climate finance actions by the EU

and its Member States is available on the UNFCCC website.⁸

Belgium uses the Rio markers to report to the Development Assistance Committee of the Organisation for Economic Cooperation and Development (OECD-DAC) about the official development assistance that has been spent on activities to support the goals of the United Nations treaties on biodiversity,

⁸ http://unfccc.int/cooperation_support/financial_mechanism/fast_start_finance/items/5646.php

climate adaptation and mitigation and desertification (respectively UNCBD, UNFCCC and UNCCD). These are policy markers that provide a gauge of policy objectives but do not make it possible to quantify financial flows. Belgium sees a lot of merit in the OECD task team on improvement of Rio Markers, Environment and Development Finance Statistics which will inter alia review options to improve the quality and robustness of the Rio markers and support greater accountability in reporting against the Rio Conventions. The data for the calculation of expenditure concerning climate change were obtained from the ODA databank of the Directorate General for Development Cooperation and Humanitarian Aid (DGDC).

Belgium, as an EU Member State, also reports under the new EU Monitoring Mechanism which provides annual reporting of up-to-date information on financial support and technology transfer activities to developing countries based on the best data available. This updated reporting mechanism is being implemented from 2013.

In summary, the provision of financial, technological and capacity-building support to non-Annex I Parties by Belgium in the years 2011-2012 has focused on:

- Predominantly **adaptation** and cross-cutting activities.
- Provision of support under the form of **grants**, mainly directed towards **Africa** and **Least Developed Countries** (LDCs).
- Non-earmarked contributions to multilateral channels (Adaptation Fund, GEF...) or specialized UN agencies, but also on bilateral projects mainly directed towards African partner countries.

CTF Table 7: Provision of public financial support: summary information in 2011-2012

Allocation channels	European euro - EUR				
				Climate-specific ^d	
	Core/general ^c	Mitigation	Adaptation	Cross-cutting ^e	Other
2011					
Total contributions through multilateral channels		1,200,000.00	10,000,000.00	16,060,103.00	
Multilateral climate change funds ^g			10,000,000.00	15,785,103.00	
Other multilateral climate change funds ^h				242,711.00	
Multilateral financial institutions, including regional development banks					
Specialized United Nations bodies		1,200,000.00		275,000.00	
Total contributions through bilateral, regional and other channels		280,000.00	2,489,000.00	1,121,300.00	
Total		1,480,000.00	12,489,000.00	17,181,403.00	
2012					
Total contributions through multilateral channels		378,000.00	7,142,000.00	15,589,814.00	1,500,000.00
Multilateral climate change funds ^g			6,200,000.00	14,801,814.00	
Other multilateral climate change funds ^h				259,540.00	
Multilateral financial institutions, including regional development banks				338,000.00	
Specialized United Nations bodies		378,000.00	942,000.00	450,000.00	1,500,000.00
Total contributions through bilateral, regional and other channels			2,672,000.00	1,149,500.00	
Total		378,000.00	9,814,000.00	16,739,314.00	1,500,000.00

The majority of funds comes from Belgium's development cooperation policy, which has sustainable development and poverty alleviation as the most important goal. Development cooperation is incorporated into the Federal Public Service Foreign Affairs, Foreign Trade and Development Cooperation (FPS SA) as the Directorate General for Development Cooperation and Humanitarian Aid (DGDC). Development cooperation is primarily the responsibility of the Federal Government. As the Regions have competencies in fields that are connected with their region or territory (water policy, the environment, nature conservation, etc.) and have the powers relating to international relation in those fields, the Regions are also involved in the international aspects of climate change. Synergy between federal and federated entities as well as overall policy consistency are important priorities of Belgium's development cooperation policy

With regard to Fast-Start finance, the federal government has contributed the main part of the Belgian contribution, while the Regions also contributed to support adaptation and mitigation in the developing countries as part of Belgium's commitments following the UNFCCC COPs in Copenhagen and Cancún. Table 7 above provides a summary of the public financial support, while tables 7(a) and 7(b) give information on the public financial support through respectively multilateral channels and bilateral, regional and other channels. In the tables 7 and 7(a), Belgium decided

not to include core/general contributions to United Nations bodies and other multilateral or international organizations and the EU, as it is impossible to know which amount flows to climate change and when. In order not to give a distorted view of climate support, Belgium opted to exclude this information in its first biennial report. The climate finance tracking of these in-

6.1 Finance

In implementation of the Federal Government coalition agreement of 2003, Belgium direct bilateral ODA targets towards 18 countries, 13 of which are located in Africa. Nine of these countries belong to the group of Least Developed Countries (LDCs). The following sectors are given priority: basic health care, education and training, agriculture and food security and basic infrastructure. It was also confirmed by the Minister for Development Cooperation in policy memoranda that Belgium would fund adaptation actions in LDCs, with a special attention for Africa and fragile states and would strive to better integrate climate change in all actions it supported in developing countries.

The Flemish government focuses on humanitarian aid and disaster prevention, forestry and agriculture and water manage-

ment. The project beneficiaries live in the Flemish Region's partner countries – Malawi, Mozambique and Southern Africa, and in Uganda, the Latin American and Caribbean regions, the Comoros, Zambia and Kenya. The Fast-Start Wallonie programme also focuses on the Region's partner countries: Benin, Burkina Faso, Burundi, Senegal, Democratic Republic of Congo, Rwanda and Haiti. This programme operated through project calls. These projects encompass domestic energy (more efficient ovens and production of efficient charcoal), waste, water, agriculture (e.g. micro-irrigation), reforestation and rehabilitation of degraded land. During the Fast-Start period, the Region of Brussels-Capital chose to direct its support towards vulnerable communities in developing countries via the Adaptation Fund.

stitutions themselves is the only option to deliver the reporting information required. Belgium provides specific examples of the provision of technology development and transfer support and capacity-building support in textual format. All this information is also elaborated with more details in chapter 7 of the sixth National Communication.

In all its bilateral support, Belgium strongly supported a country-driven approach to aid delivery, emphasizing that climate investments are much more effective when owned and driven by local governments. Resolutely striving towards maximum aid effectiveness, in line with the Declaration of Paris and the principles of "Good multilateral donorship", Belgium also rationalized its cooperation with multilateral organizations by aiming to provide them maximum core funding and limiting earmarked contributions to the programmes they conduct. Tracking climate finance through these core contributions to multilateral organizations is a major challenge for individual states, including Belgium. Therefore, Belgium esteems the joint climate finance tracking methodology by the Multilateral Development Banks (MDBs). Such a methodology is paramount to enhance accountability with regard to climate finance commitments and to monitor trends and progress in climate related-investment.

As a result of all these choices, Belgium predominantly supported adaptation or cross-cutting activities during this two-year period. Adaptation actions in non-Annex I Parties was mainly supported by providing substantial financial support to the Adaptation Fund, the Least Developed Country Fund or various bilateral initiatives, while mitigation actions were supported through specialized UN bodies. Cross-cutting actions were also significantly supported, notably via contributions to

the Sustainable Forest Management component of the GEF and support earmarked for technology transfer to the Special Climate Change Fund. Technology transfer and capacity building activities mainly occurred by supporting increased cooperation between universities and scientific institutions, the creation of a research platform for climate change and development cooperation and the diffusion of training courses on climate change adaptation in French-speaking developing countries.

The methodology used by Belgium to specify the funds for the purpose of assisting non-Annex I Parties to mitigate and adapt as provided, committed and/or

pledged is based on the OECD practice. Therefore, under commitment, Belgium understands a firm obligation, expressed in writing and backed by the necessary funds, undertaken by an official donor to provide specified assistance to a recipient country or a multilateral organisation. Provided support (disbursement) is the actual transaction of providing financial resources. The category 'pledged support' is not used by Belgium as all support for 2011 and 2012 is committed or disbursed.

Belgium recognises that international climate finance will come from a wide variety of sources, public and private, bilateral and multilateral, including alternative

sources. Private finance is key to scale up levels of climate finance and important to achieve the transformation in investment required to meet the 2°C goal, as it is pivotal to achieve long-term transformation of developing countries into low-carbon and climate-resilient economies. However, Belgium also emphasizes that public support will always play a key role in leveraging private funds and in supporting adaptation actions in certain circumstances.

Belgium invests in the private sector in emerging countries through the Belgian Investment Company for Developing Countries (BIO), hence contributing to social and economic growth in emerging and de-

veloping countries. However, for tracking private climate finance flows there are at the moment significant data, methodological and knowledge gaps. Therefore, there is a need to continue sharing experiences and best practices on the efforts to mobilise private finance. Belgium participates in the Research Collaborative, coordinated and hosted by the OECD Secretariat, of interested governments, relevant research institutions and international finance institutions. The goal of this open network is to partner and share best available data, expertise and information to advance policy-relevant research in a comprehensive and timely manner.

CTF Table 7a. Provision of public financial support: multilateral channels (2011 and 2012)

Donor funding	Total Amount				Status	Funding source	Financial instrument	Type of support	Sector	Comments
	Core/general		Climate-specific							
	Domestic Currency	USD	Domestic Currency	USD						
2011										
Total contributions through multilateral channels										
Multilateral climate change funds ⁸										
1. Global Environment Facility			5.465.000,00		Provided	ODA	Grant	Cross-cutting	Cross-cutting	
2. Least Developed Countries Fund			10.000.000,00		Provided	ODA	Grant	Adaptation	Cross-cutting	
3. Special Climate Change Fund			10.000.000,00		Provided	ODA	Grant	Cross-cutting	Cross-cutting	
4. Adaptation Fund										
5. Green Climate Fund										
6. UNFCCC Trust Fund for Supplementary Activities			77.392,00		Provided	Other ()	Grant	Cross-cutting	Cross-cutting	
7. Other multilateral climate change funds										
Kyoto Protocol core contribution			104.077,00		Provided	ODA	Grant	Cross-cutting	Cross-cutting	
UNFCCC core contribution			138.634,00		Provided	ODA	Grant	Cross-cutting	Cross-cutting	
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										

Donor funding	Total Amount				Status	Funding source	Financial instrument	Type of support	Sector	Comments
	Core/general		Climate-specific							
	Domestic Currency	USD	Domestic Currency	USD						
Specialized United Nations bodies										
1. United Nations Development Programme										
National Programme for Managing Climate Change in Malawi			275.000,00		Committed	ODA	Grant	Cross-cutting	Other (Food Security), Other (Sustainable economic development)	0,165 million euros already provided.
Yasuni-ITT Fund / Government of Ecuador			1.200.000,00		Committed	Other ()	Grant	Mitigation	Cross-cutting	
2. United Nations Environment Programme										
3. Other										
2012										
Total contributions through multilateral channels										
Multilateral climate change funds ⁸										
1. Global Environment Facility			5.456.000,00		Provided	ODA	Grant	Cross-cutting	Cross-cutting	
2. Least Developed Countries Fund			5.000.000,00		Provided	ODA	Grant	Adaptation	Cross-cutting	
3. Special Climate Change Fund			9.000.000,00		Provided	ODA	Grant	Cross-cutting	Cross-cutting	
4. Adaptation Fund			1.200.000,00		Provided	Other ()	Grant	Adaptation	Cross-cutting	
5. Green Climate Fund										
6. UNFCCC Trust Fund for Supplementary Activities			86.274,00		Provided	ODA	Grant	Cross-cutting	Cross-cutting	
7. Other multilateral climate change funds										
Kyoto Protocol core contribution			97.599,00		Provided	ODA	Grant	Cross-cutting	Cross-cutting	
UNFCCC core contribution			161.941,00		Provided	ODA	Grant	Cross-cutting	Cross-cutting	

Donor funding	Total Amount				Status	Funding source	Financial instrument	Type of support	Sector	Comments
	Core/general		Climate-specific							
	Domestic Currency	USD	Domestic Currency	USD						
Multilateral financial institutions, including regional development banks										
1. World Bank			338.000,00		Provided	Other ()	Grant	Cross-cutting	Cross-cutting	
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										
1. United Nations Development Programme										
Various programmes			450.000,00		Provided	ODA	Grant	Cross-cutting	Cross-cutting	
Yasuni-ITT Fund / Government of Ecuador			300.000,00		Committed	ODA	Grant	Mitigation	Cross-cutting	0.95 million € already provided
2. United Nations Environment Programme										
3. Other										
UNIDO			78.000,00		Provided	ODA	Grant	Mitigation	Industry, Energy	
ICRAF			1.500.000,00		Provided	ODA	Grant	Other (Agroforestry)	Agriculture, Forestry	
UNESCO			942.000,00		Provided	ODA	Grant	Adaptation	Water and sanitation	

CTF Table 7b. Provision of public financial support: bilateral, regional and other channels (2011 and 2012)

	Total Amount		Status	Funding source	Financial instrument	Type of support	Sector	Additional Information
	Domestic Currency	USD						
Climate-specific								
2011								
Total contributions through bilateral, regional and other channels								
/ Flemish Partnership Water for Development	922.000,00		Provided	ODA	Grant	Adaptation	Water and sanitation	Financing water, sanitation and integrated resource management projects and programmes with focus on capacity building and technology transfer related to sustainable management of natural resources. Implementation period ran from 2010-2011-2012.
Mozambique, Africa / Red Cross (Mozambique)	314.000,00		Provided	ODA	Grant	Adaptation	Other (Disaster preparedness)	Zembezi River Basin: Improve the disaster preparedness and emergency response capacity of the Mozambican Red Cross. Overall objective: to alleviate the suffering of people affected by natural disasters in Mozambique by providing them with a timely effective and well coordinated response based on a sufficient level of institutional preparedness.
Benin, Africa / Promotion des foyers érythréens dans les communes riveraines du parc national de le Pendjari	284.000,00		Committed	Other ()	Grant	Cross-cutting	Energy	Benin Ecotourism , Abomey Calavi
Burkina Faso, Africa / Acacia senegal et réhabilitation de terres dégradées pour l'amélioration de la productivité agro-sylvo-pastorale en zone sèche	300.000,00		Committed	Other ()	Grant	Cross-cutting	Agriculture	Centre national des semences forestières, Ouagadougou
Burundi, Africa / Amélioration de la gestion des déchets solides et liquides de la commune de Mutimbuzi	214.000,00		Committed	Other ()	Grant	Cross-cutting	Energy	Œuvre humanitaire pour la protection et le développement OPDE, Bujumbura
Senegal, Africa / Restauration et conservation de la mangrove dans la réserve de biosphère du delta du Saloun	270.000,00		Committed	Other ()	Grant	Adaptation	Forestry	ADG, Thies

	Total Amount							
	Climate-specific							
Donor funding	Domestic Currency	USD	Status	Funding source	Financial instrument	Type of support	Sector	Additional Information
Senegal, Africa / Développement de la filière charbon de paille au Sénégal	300.000,00		Committed	Other ()	Grant	Cross-cutting	Energy	Association sénégalaise de gestion participative des ressources naturelles, NEBEDAY, Dakar Fann
Democratic Republic of the Congo, Africa / projet pilote d'adaptation de l'agriculture familiale au CC par la promotion de l'agro écologie dans la presqu'île de Buzi-Bulenga au sud Kivu	214.000,00		Committed	Other ()	Grant	Adaptation	Agriculture	Associazione di cooperazione e solidarieta et Villages durables, GOMA
Rwanda, Africa / projet de développement du secteur de la pico-hydro-électricité	280.000,00		Committed	Other ()	Grant	Mitigation	Energy	Energy and water sanitation authority, Kigali
LDCs, SIDS, Latin America and the Caribbean, Haiti / Gestion autonome de l'alimentation en eau potable et renforcement des capacités pour les populations rurales vulnérables de l'Artibonite	269.000,00		Committed	Other ()	Grant	Adaptation	Water and sanitation	Organisation Calbasse Haïti, Port au Prince
Bolivia, Algeria, Benin, Burkina Faso, Burundi, Democratic Republic of the Congo, Haiti, Morocco, Rwanda, Senegal, Viet Nam, Palestine / Fonds de Solidarité Internationale de l'Eau	500.000,00		Committed	ODA	Grant	Adaptation	Water and sanitation	
/ Institut de l'Energie et de l'Environnement de la Francophonie (IEPF) -Note de décryptage	10.000,00		Provided	Other ()	Grant	Cross-cutting	Cross-cutting	
/ o Suivi des projets bilatéraux-Coaching ADG	13.300,00		Committed	Other ()	Grant	Cross-cutting	Cross-cutting	

Donor funding	Total Amount		Status	Funding source	Financial instrument	Type of support	Sector	Additional Information
	Domestic Currency	USD						
2012								
Total contributions through bilateral, regional and other channels								
Burkina Faso, Africa / Création d'une ferme école agro-écologique d'apprentissage et de capitalisation des initiatives locales d'adaptation aux CC dans la commune rurale de Saaba	291.000,00		Committed	Other ()	Grant	Cross-cutting	Agriculture	Association Songui Manégré et Aide au Développement endogène, Ouagadougou
Uganda, Africa / Ageas: Afromaisson (Uganda)	102.000,00		Provided	ODA	Grant	Adaptation	Water and sanitation	Protection of drinking water services by means of basin protection, sensitization and capacity building in the municipality Fort Portal, Uganda. This project focuses on securing the drinking water supply of the municipality Fort Portal, by improving the governance of water supply and sanitation practices at the upstream part of the Mpanga basin in Uganda.
Africa / World Agroforestry Center	1.500.000,00		Provided	ODA	Grant	Adaptation	Forestry	Evergreen agriculture in Southern Africa: Creating a network of organisations and innovation platforms for coordination of research and development on Evergreen Agriculture; Reviewing experiences gained from past research, refine and optimize evergreen agriculture and distil the experiences into policy recommendations and share them widely; Sensitizing policy makers to develop policies which facilitate the wide-scale promotion and adoption of evergreen agriculture; Mobilizing extension staff, farmers and other land users and scale-up Evergreen Agriculture in southern Africa.
Africa, Benin / Promotion des exploitations agricoles résilientes aux CC dans la zone agro-écologique 5 au BENIN	259.000,00		Committed	Other ()	Grant	Cross-cutting	Agriculture	Initiative pour un Développement intégré durable, Porto-Novo
Africa, Democratic Republic of the Congo / Appui au renforcement des capacités des agriculteurs et des organisations paysannes des territoires de Kabare et Uvira en vue de leur adaptation au CC	300.000,00		Committed	Other ()	Grant	Adaptation	Agriculture	OXFAM

	Total Amount							
	Climate-specific							
Donor funding	Domestic Currency	USD	Status	Funding source	Financial instrument	Type of support	Sector	Additional Information
Africa, Senegal / Amélioration des conditions de salubrité de la ville de Saint-Louis	270.000,00		Committed	Other ()	Grant	Adaptation	Cross-cutting	Ville de Saint-Louis
Africa, Senegal / Production de charbon de bois efficient et durable en Casamance	300.000,00		Committed	Other ()	Grant	Cross-cutting	Energy	CEBED
LDCs, SIDS, Latin America and the Caribbean, Haiti / Adaptation aux CC de la ville de port de Paix par la gestion intégrée des déchets ménagers	199.500,00		Committed	Other ()	Grant	Cross-cutting	Cross-cutting	Groupe d'appui au développement local, Port de Paix
Algeria, Benin, Bolivia, Burkina Faso, Burundi, Democratic Republic of the Congo, Haiti, Morocco, Rwanda, Senegal, Viet Nam / Fonds de Solidarité Internationale de l'Eau	500.000,00		Committed	ODA	Grant	Adaptation	Water and sanitation	
/ IEPF - Soutien à la mise en oeuvre des projets financés par la Wallonie	20.000,00		Committed	Other ()	Grant	Cross-cutting	Cross-cutting	
/ IEPF - Note de décryptage	20.000,00		Provided	Other ()	Grant	Cross-cutting	Cross-cutting	
/ IISD - Earth Negotiation Bulletin	60.000,00		Committed	Other ()	Grant	Cross-cutting	Cross-cutting	Traduction en français du ENB

6.2 Technology development and transfer and Capacity-building

Belgium has always included the aspect of technology transfer in its bilateral agreements. The transfer of environmentally sound technology should allow rapid growth by the developing countries while safeguarding the general environment and natural resources.

Capacity-building is also a standard aspect in the bilateral agreements of Belgium. It plays a key role in preparing the individual countries for complying with the provisions of the wide array of international agreements, national plans, technological development, etc. Furthermore, capacity-building is a key aspect of the Fast-Start finance as this aims at enabling developing countries to enhance the most urgent adaptation activities and to undertake mitigation efforts.

The bodies involved in indirect cooperation⁹, particularly non-governmental organisations (NGOs), scientific institutions and universities, also play an important role in terms of specific types of development, supplying information to the public,

⁹ Indirect cooperation entails the cooperation through non-governmental organisations, scientific institutions and universities and via BIO, the Belgian Investment Company for Developing Countries.

capacity-building and raising awareness. They receive substantial support from the DGDC.

Information on measures to support technology transfer and access can be found in table 8, on measures to support capacity-building can be found in table 9. Although it is difficult to make precise estimates of the share of the programmes and projects relating to climate change, the following is an overview of the efforts with a clear technology transfer component. This information relates directly to the information included in chapter 7 of the sixth National Communication.

VLIR-UOS AND CIUF

The DGDC supports the Flemish inter-university council for Development Cooperation to establish partnerships between universities and university colleges in Flanders and the South. There are research projects specifically relating to climate change between universities and university colleges in Flanders and the universities of Jimma and Bahir Dar in Ethiopia (renewable energy and hydrology), Dar Es Salaam in Tanzania (waste water management), the Hassan II University in Morocco (sustainable land management),

José Mati Péres and José A. Echeverría universities in Cuba (biofuels), Mozambique (monitoring carbon storage), the university of Nairobi in Kenya (biodiversity) and the Universidad Mayor de San Simón in Bolivia (forestry research).

Through the French-speaking equivalent - CIUF (Conseil Interuniversitaire de la Communauté française de Belgique) - the DGDC supports research projects of universities in Wallonia and their partners in the South concerning climate change in Cameroon (University of Yaounde, green energy and agriculture and the university of Dschang, biotechnology), Senegal (Thiès Agricultural College, Jatropha), Central African Republic (university of Bangui, sustainable agriculture), DR Congo (universities of Kinshasa, Lubumbashi and Graben, on erosion, agriculture and food security), Morocco (National Forestry College and Mohamed I university, forestry research and water management for agriculture), the Philippines (Manila University, land and water management) and in Niger (Abdou Moumouni university, water management).

KLIMOS: RESEARCH PLATFORM FOR CLIMATE CHANGE AND DEVELOPMENT COOPERATION

KLIMOS is a partnership of different Flemish universities - KULeuven, VUB, UGent and the Katholieke Hogeschool Sint-Lieven - under which different research groups work on the following key themes: energy, food security and forests.

With their research, these scientists support the DGDC in drafting policy for integrating mitigation and adaptation into development cooperation.

How is this development aid organised? Firstly, KLIMOS sets out policy recommendations in various research papers based on the findings of research conducted in both the northern and southern hemispheres. Secondly, KLIMOS researchers are directly involved in training sessions on different environmental topics for DGDC staff and the partners in the South.

Research papers have been completed on topics including the following:

- the impact of certification on stopping deforestation
- climate change and food security
- REDD: Reducing Emissions from Deforestation and Forest Degradation
- climate matching and climate envelope analysis as support for a food security policy
- the ecological footprint of the mobility of development organisations
- new trends in traditional bio-energy in developing countries
- eco-taxation
- sustainable town planning and urban development

Doctorate students from the KLIMOS network undertook (field) research in various countries in the South in 2011. They received separate funding from VLIRUOS for a number of studies.

Data from Peru are analysed to examine how coffee plantations can play a role in REDD (Reducing Emissions from Deforestation and Forest Degradation). Research in carbon storage in forests and trees is being undertaken in cooperation with the Jimma University in Ethiopia. A doctorate student from Ethiopia paid a short research visit to Belgium for his thesis. KLIMOS cooperates with the University of Limpopo in South Africa on sustainable higher education and the KLIMOS toolkit (see below).

In 2010 KLIMOS started developing a toolkit to help make the subject of ‘sustainable environment’ an integral part of our development programmes. The toolkit was further developed in 2011, with different training sessions organised to support use of this instrument. In addition, KLIMOS was involved in a four-day course on “Adaptation to climate change and development cooperation”. This course was for DGDC staff and it introduces a step-by-step methodology for incorporating climate issues when developing strategies, plans, programmes and projects for development cooperation. The course was run in 2012 in a large number of our partner countries, and the local executive partners were also invited. Two regional workshops were held in 2012 - in Bamako (for Benin, Niger, Senegal, Morocco en Mali) and Kampala (in English, for Rwanda, Mozambique, Tanzania, South Africa and Uganda).

SCIENTIFIC INSTITUTIONS

DGDC supports the Royal Museum for Central Africa and the Royal Belgian Institute of Natural Sciences in their projects for capacity-building of scientists in the South. The aim is to educate researchers in the South in the study of indigenous fauna and flora to provide a scientific basis for improved management and protection of biodiversity.

The Royal Belgian Institute of Natural Sciences was also called upon to improve capacity concerning protection of biodiversity and development cooperation in-house.

The Meise botanical gardens, the Royal Museum for Central Africa and the Royal Belgian Institute of Natural Sciences, together with the Congolese university, support the Biodiversity Centre in Kisangani.

OECD-DAC-EPOC TASK TEAM ON CLIMATE CHANGE AND DEVELOPMENT

The DAC-EPOC High Level meeting in May 2009 authorised this joint task force of the committees for development cooperation and the environment to further extend the OECD action on adaptation and development. Guidelines were issued on integrating climate change adaptation into development cooperation. Based on these guidelines, members of German development cooperation developed a training course on climate change adaptation and development. The Belgian Federal

Government funded the translation of this course into French so that it can also be distributed in French-speaking countries in the South.

STRENGTHENING TECHNICAL CAPACITY RELATED TO THE CLEAN DEVELOPMENT MECHANISM

Belgium supports capacity development for CDM in Uganda. An amount of 2 million EUR (2010 – 2014) is provided. The project aims to strengthen the technical capacity on CDM project formulation and clear understanding of CDM rules and procedures amongst Ugandan experts; to support the development of a portfolio of CDM projects and to create awareness on investment opportunities under the CDM.

SUPPORT FOR ATTRACTING FINANCING FOR MITIGATION ACTIVITIES IN DEVELOPING COUNTRIES

End of 2009, the FPS Health, Food Chain Safety and Environment started an initiative to promote CDM Programme of Activities (PoA) development in five African countries (Rwanda, Democratic Republic of Congo, Uganda, Tanzania and Mozambique). The initiative consists of several phases:

- a scoping study on the opportunities for PoAs and of the development of two Project Idea Notes (PIN) per country (2010 – 2011).

- support to develop two PoAs (2012 – 2014):
 - a Renewable Energy PoA in Rwanda
 - a Treatment of Municipal Waste PoA in Mozambique

Support for the identification of opportunities for a sustainable charcoal production sector in Mozambique and Rwanda to benefit from climate financing, either through the CDM or the NAMA framework (2013 – 2015).

Indeed, the CDM may not be able anymore to deliver the necessary finance, especially for those projects for which carbon financing is the sole or the most important revenue source. It was therefore decided to expand the scope of work towards the development of a NAMA (Nationally Appropriate Mitigation Action) framework. The total budget for these activities amounts to 391.600 €.

7. Other reporting matters

7.1 Domestic burden sharing

The responsibilities in the field of energy and climate policy are divided between the three regions and the federal State¹⁰. The three regions and the federal State started discussions on how to distribute the burdens through a domestic burden-sharing related to the 2013-2020 period, including the distribution of the European non-ETS objective, renewable energy objective, and international climate finance. The National Climate Commission coordinates the policies implemented at regional and federal level, including on the basis of the internal burden-sharing agreement. Taking into account the intertwined competences and responsibilities in this matter in Belgium, the domestic burden-sharing will be an important tool for assessing Belgium's implementation of its commitments under the Convention but also for the implementation of some aspects of the Sixth State Reform (see point 7.2).

¹⁰ The legal texts, approved by the Parliament, will be published soon: article 68 de la "Loi spéciale portant réforme du financement des communautés et des régions, élargissement de l'autonomie fiscale des régions et financement des nouvelles compétences"/ «Bijzondere wet tot hervorming van de financiering van de gemeenschappen en de gewesten, tot uitbreiding van de fiscale autonomie van de gewesten en tot financiering van de nieuwe bevoegdheden » and « loi relative au mécanisme de responsabilisation climat » / « wet met betrekking tot het klimaatresponsabiliseringsmechanisme ».

7.2 Belgium Sixth State Reform

The December 2011 institutional agreement on the sixth State reform, titled 'A more efficient federal State and more autonomous entities', provides for a State reform that took place over several stages. The last stage has been approved by the federal parliament in September 2013.

Two aspects of the reform directly concern Belgium's domestic arrangements related to self-assessment of compliance with emission reduction commitments at the European and international levels, as well as the establishment of national rules for taking local action against domestic non-compliance with emission reduction targets:

The mechanism for increasing the awareness of climate responsibility among the regions (mécanisme de responsabilisation climat - klimaatresponsabiliseringsmechanisme): this mechanism will start in 2015¹¹; and consists in determining a multiannual reference trajectory on the reduction of greenhouse gas emissions in the residential and tertiary building sector (excluding industrial buildings), for each region. The trajectories are set via a federal decree for the 2015-2020 period, after ap-

¹¹ National Reform Programme 2013, 25 April 2013 p.25, available at: ec.europa.eu/europe2020/pdf/nd/nrp2013_belgium_en.pdf

proval by the regions and on the basis of a proposal from the National Climate Commission. However, if the National Climate Commission does not make any proposal by 1st July 2014 the default trajectories, inscribed in annex to the law, will be adopted. If a region exceeds its assigned objective, it receives a financial bonus proportional to its distance to the trajectory, to be invested in emission reduction policies. If a region fails to meet its assigned objective, it will be charged with a financial penalty proportional to its distance to the trajectory, to be invested in emission reduction policies by the federal State. This mechanism will be fuelled with the revenues from the auctioning of emission quotas assigned to Belgium, that are yet to be distributed between the regions and the federal State through the domestic-burden sharing. The amounts are calculated by multiplying the distance to target in tons CO₂-eq. with the emission quotas average price auctioned during the same year. In order to ensure that a sufficient part of the auctioning revenues are preserved, a bonus ceiling was set at a level equal to the federal State's share of auctioning revenues, while the penalties ceiling was set at 50% of the regional share of the auctioning revenues.

A substitution right for international obligations under the UNFCCC and its Protocols (droit de substitution/ recht op indeplaatsstelling):¹² the 'substitution right' is

¹² Article 16§4 of the « Loi spéciale de réforme institutionnelle du 08 août 1980 » / « Bijzondere wet van 8 augustus 1980 tot hervorming der instellingen ».

a mechanism introduced in Belgium law, with the aim of ensuring Belgium's compliance with its international obligations. Indeed, according to Belgian domestic law, competences that are attributed exclusively entail that only the competent entity is also competent for the respect of obligations at national, European and international level. However, international public law does not allow federal states to withdraw from their international obligations on the basis that a federal entity is competent and not compliant, as described in article 27 of the Vienna Convention on the Law of treaty (this is also the interpretation of the European Union Court of Justice case-law). As a consequence the federal State vouches for international law violations on the part of federal entities. The substitution right was introduced in order to remedy to the contradiction between Belgium domestic law and international and European law. This right is now extended more specifically to Belgium international obligations under the UNFCCC and its Protocols (article 16§4 of the "loi spéciale de réforme institutionnelle du 08 août 1980"/"Bijzondere wet van 8 augustus 1980 tot hervorming der instellingen"). In principle, this right enables the federal State, under strict conditions, to substitute its action to the non-action of a federal entity when it is subject to a non-compliance assessment reported by a relevant body under the UNFCCC or its Protocols. This mechanism also applies to European law obligations aiming at implementing the UNFCCC and its Protocols.

7.3 Implementation of the Monitoring Mechanism Regulation

Pursuant to Article 4 of Regulation (EU) n°525/2013, by 9 July 2015 Belgium will prepare a specific national system for policies and measures and projections as already exists for GHG inventory.

Pursuant to Article 4 of Regulation (EU) n°525/2013, Belgium will prepare a low-carbon development strategy that will be compatible with the global perspective of an emissions reduction of 80 to 95% in 2050 compared to 1990 for Annex I Parties.

BELGIUM'S FIRST BIENNIAL REPORT

Under the United Nations Framework Convention on Climate Change

This report was prepared in collaboration with :

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