

Annex II

Emission reduction commitments

1. The emission reduction commitments listed in the tables below relate to the provisions of article 3, paragraphs 1 and 10, of the present Protocol.
2. Table 1 includes the emission ceilings for sulphur dioxide (SO₂), nitrogen oxides (NO_x), ammonia (NH₃) and volatile organic compounds (VOCs) for 2010 up to 2020 expressed in thousands of metric tons (tonnes) for those Parties that ratified the present Protocol prior to 2010.
3. Tables 2–6 include emission reduction commitments for SO₂, NO_x, NH₃, VOCs and PM_{2.5} for 2020 and beyond. These commitments are expressed as a percentage reduction from the 2005 emission level.
4. The 2005 emission estimates listed in tables 2–6 are in thousands of tonnes and represent the latest best available data reported by the Parties in 2012. These estimates are given for information purposes only, and may be updated by the Parties in the course of their reporting of emission data under the present Protocol if better information becomes available. The secretariat will maintain and regularly update on the Convention's website a table of the most up-to-date estimates reported by Parties, for information. The percentage emission reduction commitments listed in tables 2–6 are applicable to the most up-to-date 2005 estimates as reported by the Parties to the Executive Secretary of the Commission.
5. If in a given year a Party finds that, due to a particularly cold winter, a particularly dry summer or unforeseen variations in economic activities, such as a loss of capacity in the power supply system domestically or in a neighbouring country, it cannot comply with its emission reduction commitments, it may fulfil those commitments by averaging its national annual emissions for the year in question, the year preceding that year and the year following it, provided that this average does not exceed its commitment.

Table 1

Emission ceilings for 2010 up to 2020 for Parties that ratified the present Protocol prior to 2010 (expressed in thousands of tonnes per year)

	<i>Party</i>	<i>Ratification</i>	<i>SO₂</i>	<i>NO_x</i>	<i>NH₃</i>	<i>VOCs</i>
1	Belgium	2007	106	181	74	144
2	Bulgaria	2005	856	266	108	185
3	Croatia	2008	70	87	30	90
4	Cyprus	2007	39	23	9	14
5	Czech Republic	2004	283	286	101	220
6	Denmark	2002	55	127	69	85
7	Finland	2003	116	170	31	130
8	France	2007	400	860	780	1100
9	Germany	2004	550	1081	550	995
10	Hungary	2006	550	198	90	137
11	Latvia	2004	107	84	44	136
12	Lithuania	2004	145	110	84	92

	<i>Party</i>	<i>Ratification</i>	<i>SO₂</i>	<i>NO_x</i>	<i>NH₃</i>	<i>VOCs</i>
13	Luxembourg	2001	4	11	7	9
14	Netherlands	2004	50	266	128	191
15	Norway	2002	22	156	23	195
16	Portugal	2005	170	260	108	202
17	Romania	2003	918	437	210	523
18	Slovakia	2005	110	130	39	140
19	Slovenia	2004	27	45	20	40
20	Spain ^a	2005	774	847	353	669
21	Sweden	2002	67	148	57	241
22	Switzerland	2005	26	79	63	144
23	United Kingdom of Great Britain and Northern Ireland	2005	625	1 181	297	1 200
24	United States of America	2004	^b	^c		^d
25	European Union	2003	7 832	8 180	4 294	7 585

^a Figures apply to the European part of the country.

^b Upon acceptance of the present Protocol in 2004, the United States of America provided an indicative target for 2010 of 16,013,000 tons for total sulphur emissions from the PEMA identified for sulphur, the 48 contiguous United States and the District of Columbia. This figure converts to 14,527,000 tonnes.

^c Upon acceptance of the present Protocol in 2004, the United States of America provided an indicative target for 2010 of 6,897,000 tons for total NO_x emissions from the PEMA identified for NO_x, Connecticut, Delaware, the District of Columbia, Illinois, Indiana, Kentucky, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, West Virginia, and Wisconsin. This figure converts to 6,257,000 tonnes.

^d Upon acceptance of the present Protocol in 2004, the United States of America provided an indicative target for 2010 of 4,972,000 tons for total VOC emissions from the PEMA identified for VOCs, Connecticut, Delaware, the District of Columbia, Illinois, Indiana, Kentucky, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, West Virginia, and Wisconsin. This figure converts to 4,511,000 tonnes.

Table 2

Emission reduction commitments for sulphur dioxide for 2020 and beyond

	<i>Convention Party</i>	<i>Emission levels 2005 in thousands of tonnes of SO₂</i>	<i>Reduction from 2005 level (%)</i>
1	Austria	27	26
2	Belarus	79	20
3	Belgium	145	43
4	Bulgaria	777	78
5	Canada ^a		
6	Croatia	63	55
7	Cyprus	38	83
8	Czech Republic	219	45
9	Denmark	23	35

	<i>Convention Party</i>	<i>Emission levels 2005 in thousands of tonnes of SO₂</i>	<i>Reduction from 2005 level (%)</i>
10	Estonia	76	32
11	Finland	69	30
12	France	467	55
13	Germany	517	21
14	Greece	542	74
15	Hungary	129	46
16	Ireland	71	65
17	Italy	403	35
18	Latvia	6.7	8
19	Lithuania	44	55
20	Luxembourg	2.5	34
21	Malta	11	77
22	Netherlands ^b	65	28
23	Norway	24	10
24	Poland	1 224	59
25	Portugal	177	63
26	Romania	643	77
27	Slovakia	89	57
28	Slovenia	40	63
29	Spain ^b	1 282	67
30	Sweden	36	22
31	Switzerland	17	21
32	United Kingdom of Great Britain and Northern Ireland	706	59
33	United States of America ^c	13 093	^c
34	European Union	7 828	59

^a Upon ratification, acceptance or approval of, or accession to, the present Protocol, Canada shall provide: (a) a value for total estimated sulphur emission levels for 2005, either national or for its PEMA, if it has submitted one; and (b) an indicative value for a reduction of total sulphur emission levels for 2020 from 2005 levels, either at the national level or for its PEMA. Item (a) will be included in the table and item (b) will be included in a footnote to the table. The PEMA, if submitted, will be offered as an adjustment to annex III to the Protocol.

^b Figures apply to the European part of the country.

^c Upon acceptance of the present Protocol in 2017, the United States of America provided an emission figure for 2005 of 14,432,709 tons (this figure converts to 13,093 thousands of tonnes) and an indicative target for 2020 of 2,598,131 tons for total sulphur emissions from the PEMA identified for sulphur, all U.S. states except for Alaska and Hawaii. The latter figure converts to 2,357 thousands of tonnes, a reduction of 82 per cent.

Table 3

Emission reduction commitments for nitrogen oxides for 2020 and beyond^a

	<i>Convention Party</i>	<i>Emission levels 2005 in thousands of tonnes of NO₂</i>	<i>Reduction from 2005 level (%)</i>
1	Austria	231	37
2	Belarus	171	25
3	Belgium	291	41
4	Bulgaria	154	41
5	Canada ^b		
6	Croatia	81	31
7	Cyprus	21	44
8	Czech Republic	286	35
9	Denmark	181	56
10	Estonia	36	18
11	Finland	177	35
12	France	1 430	50
13	Germany	1 464	39
14	Greece	419	31
15	Hungary	203	34
16	Ireland	127	49
17	Italy	1 212	40
18	Latvia	37	32
19	Lithuania	58	48
20	Luxembourg	19	43
21	Malta	9.3	42
22	Netherlands ^c	370	45
23	Norway	200	23
24	Poland	866	30
25	Portugal	256	36
26	Romania	309	45
27	Slovakia	102	36
28	Slovenia	47	39
29	Spain ^c	1 292	41
30	Sweden	174	36
31	Switzerland ^d	94	41
32	United Kingdom of Great Britain and Northern Ireland	1 580	55
33	United States of America ^e	18 331	^e
34	European Union	11 354	42

^a Emissions from soils are not included in the 2005 estimates for European Union member States.

^b Upon ratification, acceptance or approval of, or accession to, the present Protocol, Canada shall provide: (a) a value for total estimated nitrogen oxide emission levels for 2005, either

national or for its PEMA, if it has submitted one; and (b) an indicative value for a reduction of total nitrogen oxide emission levels for 2020 from 2005 levels, either at the national level or for its PEMA. Item (a) will be included in the table and item (b) will be included in a footnote to the table. The PEMA, if submitted, will be offered as an adjustment to annex III to the Protocol.

^c Figures apply to the European part of the country.

^d Including emissions from crop production and agricultural soils (NFR 4D).

^e Upon acceptance of the present Protocol in 2017, the United States of America provided an emission figure for 2005 of 20,205,948 tons (this figure converts to 18,331 thousands of tonnes) and an indicative target for 2020 of 9,457,891 tons for total nitrogen oxide emissions from the PEMA identified for nitrogen oxide, all U.S. states except Hawaii. This figure converts to 8,580 thousands of tonnes, a reduction of 53 per cent.

Table 4

Emission reduction commitments for ammonia for 2020 and beyond

	<i>Convention Party</i>	<i>Emission levels 2005 in thousands of tonnes of NH₃</i>	<i>Reduction from 2005 level (%)</i>
1	Austria	63	1
2	Belarus	136	7
3	Belgium	71	2
4	Bulgaria	60	3
5	Croatia	40	1
6	Cyprus	5.8	10
7	Czech Republic	82	7
8	Denmark	83	24
9	Estonia	9.8	1
10	Finland	39	20
11	France	661	4
12	Germany	573	5
13	Greece	68	7
14	Hungary	80	10
15	Ireland	109	1
16	Italy	416	5
17	Latvia	16	1
18	Lithuania	39	10
19	Luxembourg	5.0	1
20	Malta	1.6	4
21	Netherlands ^a	141	13
22	Norway	23	8
23	Poland	270	1
24	Portugal	50	7
25	Romania	199	13
26	Slovakia	29	15
27	Slovenia	18	1
28	Spain ^a	365	3
29	Sweden	55	15
30	Switzerland	64	8

	<i>Convention Party</i>	<i>Emission levels 2005 in thousands of tonnes of NH₃</i>	<i>Reduction from 2005 level (%)</i>
31	United Kingdom of Great Britain and Northern Ireland	307	8
32	European Union	3 813	6

^a Figures apply to the European part of the country.

Table 5

**Emission reduction commitments for Volatile Organic Compounds for 2020
and beyond**

	<i>Convention Party</i>	<i>Emission levels 2005 in thousands of tonnes of VOC</i>	<i>Reduction from 2005 level (%)</i>
1	Austria	162	21
2	Belarus	349	15
3	Belgium	143	21
4	Bulgaria	158	21
5	Canada ^a		
6	Croatia	101	34
7	Cyprus	14	45
8	Czech Republic	182	18
9	Denmark	110	35
10	Estonia	41	10
11	Finland	131	35
12	France	1 232	43
13	Germany	1 143	13
14	Greece	222	54
15	Hungary	177	30
16	Ireland	57	25
17	Italy	1 286	35
18	Latvia	73	27
19	Lithuania	84	32
20	Luxembourg	9.8	29
21	Malta	3.3	23
22	Netherlands ^b	182	8
23	Norway	218	40
24	Poland	593	25
25	Portugal	207	18
26	Romania	425	25
27	Slovakia	73	18
28	Slovenia	37	23
29	Spain ^b	809	22
30	Sweden	197	25

	<i>Convention Party</i>	<i>Emission levels 2005 in thousands of tonnes of VOC</i>	<i>Reduction from 2005 level (%)</i>
31	Switzerland ^c	103	30
32	United Kingdom of Great Britain and Northern Ireland	1 088	32
33	United States of America ^d	15 554	^d
34	European Union	8 842	28

^a Upon ratification, acceptance or approval of, or accession to, the present Protocol, Canada shall provide: (a) a value for total estimated VOC emission levels for 2005, either national or for its PEMA, if it has submitted one; and (b) an indicative value for a reduction of total VOC emission levels for 2020 from 2005 levels, either at the national level or for its PEMA. Item (a) will be included in the table and item (b) will be included in a footnote to the table. The PEMA, if submitted, will be offered as an adjustment to annex III to the Protocol.

^b Figures apply to the European part of the country.

^c Including emissions from crop production and agricultural soils (NFR 4D).

^d Upon acceptance of the present Protocol in 2017, the United States of America provided an emission figure for 2005 of 17,145,277 (this figure converts to 15,554 thousands of tonnes) and an indicative target for 2020 of 13,429,028 tons for total VOC emissions from the PEMA identified for VOC, all U.S. states except Hawaii. This figure converts to 12,183 thousands of tonnes, a reduction of 22 per cent.

Table 6

Emission reduction commitments for PM_{2.5} for 2020 and beyond

	<i>Convention Party</i>	<i>Emission levels 2005 in thousands of tonnes of PM_{2.5}</i>	<i>Reduction from 2005 level (%)</i>
1	Austria	22	20
2	Belarus	46	10
3	Belgium	24	20
4	Bulgaria	44	20
5	Canada ^a		
6	Croatia	13	18
7	Cyprus	2.9	46
8	Czech Republic	22	17
9	Denmark	25	33
10	Estonia	20	15
11	Finland	36	30
12	France	304	27
13	Germany	121	26
14	Greece	56	35
15	Hungary	31	13
16	Ireland	11	18
17	Italy	166	10
18	Latvia	27	16
19	Lithuania	8.7	20
20	Luxembourg	3.1	15

	<i>Convention Party</i>	<i>Emission levels 2005 in thousands of tonnes of PM_{2.5}</i>	<i>Reduction from 2005 level (%)</i>
21	Malta	1.3	25
22	Netherlands ^b	21	37
23	Norway	52	30
24	Poland	133	16
25	Portugal	65	15
26	Romania	106	28
27	Slovakia	37	36
28	Slovenia	14	25
29	Spain ^b	93	15
30	Sweden	29	19
31	Switzerland	11	26
32	United Kingdom of Great Britain and Northern Ireland	81	30
33	United States of America ^c	1 941	^c
34	European Union	1 504	22

^a Upon ratification, acceptance or approval of, or accession to, the present Protocol, Canada shall provide: (a) a value for total estimated PM emission levels for 2005, either national or for its PEMA, if it has submitted one; and (b) an indicative value for a reduction of total emission levels of PM for 2020 from 2005 levels, either at the national level or for its PEMA. Item (a) will be included in the table and item (b) will be included in a footnote to the table. The PEMA, if submitted, will be offered as an adjustment to annex III to the Protocol.

^b Figures apply to the European part of the country.

^c Upon acceptance of the present Protocol in 2017, the United States of America provided an emission figure for 2005 of 2,139,127 (this figure converts to 1,941 thousands of tonnes) and an indicative target for 2020 of 1,564,495 tons for total PM_{2.5} emissions from the PEMA identified for PM_{2.5}, Alaska, Connecticut, Delaware, District of Columbia, Idaho, Illinois, Indiana, Iowa, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Montana, Nebraska, New Hampshire, New Jersey, New York, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Dakota, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming. This figure converts to 1,419 thousands of tonnes, a reduction of 27 per cent.

Annex III

Designated pollutant emissions management areas

1. The following pollutant emissions management areas (PEMAs) are listed for the purpose of the present Protocol.

Canada PEMA

2. The PEMA for sulphur for Canada is an area of 1 million square kilometres which includes all the territory of the Provinces of Prince Edward Island, Nova Scotia and New Brunswick, all the territory of the Province of Québec south of a straight line between Havre-St. Pierre on the north coast of the Gulf of Saint Lawrence and the point where the Québec-Ontario boundary intersects with the James Bay coastline, and all the territory of the Province of Ontario south of a straight line between the point where the Ontario-Québec boundary intersects the James Bay coastline and the Nipigon River near the north shore of Lake Superior.

Russian Federation PEMA

3. The Russian Federation PEMA corresponds to the European territory of the Russian Federation. The European territory of the Russian Federation is a part of the territory of the Russian Federation within the administrative and geographical boundaries of the entities of the Russian Federation located in Eastern Europe bordering the Asian continent in accordance with the conventional borderline that passes from north to south along the Ural Mountains, the border with Kazakhstan to the Caspian Sea, then along the State borders with Azerbaijan and Georgia in the North Caucasus to the Black Sea.

United States of America PEMAs

4. Description of the Geographical Scope of the U.S. Pollutant Emission Management Area (PEMA) For SO₂: All U.S. states except Alaska and Hawaii.

5. Description of the Geographical Scope of the U.S. Pollutant Emission Management Area (PEMA) For NO_x: All U.S. states except Hawaii.

6. Description of the Geographical Scope of the U.S. Pollutant Emission Management Area (PEMA) For VOCs: All U.S. states except Hawaii. 7. Description of the Geographical Scope of the U.S. Pollutant Emission Management Area (PEMA) For Particulate Matter: Alaska, Connecticut, Delaware, District of Columbia, Idaho, Illinois, Indiana, Iowa, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Montana, Nebraska, New Hampshire, New Jersey, New York, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Dakota, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming.