

**BR CTF submission workbook**

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Table 1

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

<i>GREENHOUSE GAS EMISSIONS</i>	Base year <sup>a</sup>	1990	1991	1992	1993	1994	1995	1996	1997
	<i>kt CO<sub>2</sub> eq</i>								
CO <sub>2</sub> emissions without net CO <sub>2</sub> from LULUCF	1,154,402.75	1,154,402.75	1,163,030.69	1,172,821.31	1,166,399.29	1,227,224.21	1,240,762.63	1,253,779.64	1,251,343.50
CO <sub>2</sub> emissions with net CO <sub>2</sub> from LULUCF	1,095,511.96	1,095,511.96	1,096,004.04	1,103,240.95	1,092,796.55	1,154,320.90	1,166,296.54	1,174,708.81	1,168,898.11
CH <sub>4</sub> emissions without CH <sub>4</sub> from LULUCF	48,586.36	48,586.36	46,862.13	48,095.90	42,817.96	47,907.00	45,825.27	44,524.49	43,703.26
CH <sub>4</sub> emissions with CH <sub>4</sub> from LULUCF	48,659.34	48,659.34	46,931.93	48,162.52	42,907.30	47,988.24	45,895.16	44,617.38	43,802.61
N <sub>2</sub> O emissions without N <sub>2</sub> O from LULUCF	31,903.42	31,903.42	31,586.62	31,719.78	31,606.90	32,916.51	33,226.89	34,354.03	35,147.58
N <sub>2</sub> O emissions with N <sub>2</sub> O from LULUCF	32,239.90	32,239.90	31,918.15	32,047.82	31,933.26	33,239.79	33,541.19	34,660.74	35,446.50
HFCs	15,932.31	15,932.31	17,349.61	17,767.22	18,128.88	21,051.39	25,212.33	24,596.83	24,435.37
PFCs	6,539.30	6,539.30	7,506.92	7,617.29	10,942.80	13,443.46	17,609.92	18,258.18	19,984.28
Unspecified mix of HFCs and PFCs									
SF <sub>6</sub>	12,850.07	12,850.07	14,206.04	15,635.82	15,701.97	15,019.96	16,447.52	17,022.19	14,510.54
NF <sub>3</sub>	32.89	32.89	32.89	32.89	43.85	76.74	202.81	194.27	172.78
<b>Total (without LULUCF)</b>	1,270,247.10	1,270,247.10	1,280,574.90	1,293,690.21	1,285,641.65	1,357,639.27	1,379,287.39	1,392,729.63	1,389,297.32
<b>Total (with LULUCF)</b>	1,211,765.77	1,211,765.77	1,213,949.60	1,224,504.51	1,212,454.61	1,285,140.48	1,305,205.49	1,314,058.40	1,307,250.19
<b>Total (without LULUCF, with indirect)</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Total (with LULUCF, with indirect)</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA

<i>GREENHOUSE GAS SOURCE AND SINK CATEGORIES</i>	Base year <sup>a</sup>	1990	1991	1992	1993	1994	1995	1996	1997
	<i>kt CO<sub>2</sub> eq</i>								
1. Energy	1,089,870.51	1,089,870.51	1,097,164.82	1,105,633.80	1,100,269.62	1,157,171.36	1,170,580.81	1,182,530.61	1,182,223.13
2. Industrial processes and product use	109,251.91	109,251.91	113,624.35	115,520.87	117,689.43	125,007.41	135,031.55	137,124.47	134,062.37
3. Agriculture	42,925.22	42,925.22	41,649.73	43,274.36	38,836.09	44,126.30	42,211.10	41,340.21	40,904.31
4. Land Use, Land-Use Change and Forestry <sup>b</sup>	-58,481.33	-58,481.33	-66,625.31	-69,185.70	-73,187.03	-72,498.79	-74,081.90	-78,671.23	-82,047.12
5. Waste	28,199.46	28,199.46	28,136.00	29,261.18	28,846.50	31,334.20	31,463.93	31,734.34	32,107.51
6. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO
<b>Total (including LULUCF)</b>	1,211,765.77	1,211,765.77	1,213,949.60	1,224,504.51	1,212,454.61	1,285,140.48	1,305,205.49	1,314,058.40	1,307,250.19

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

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

Table 1

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

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
<i>GREENHOUSE GAS EMISSIONS</i>										
CO <sub>2</sub> emissions without net CO <sub>2</sub> from LULUCF	1,216,700.38	1,251,663.00	1,272,504.83	1,255,768.27	1,292,777.96	1,297,856.69	1,296,831.94	1,304,375.96	1,282,188.92	1,318,231.90
CO <sub>2</sub> emissions with net CO <sub>2</sub> from LULUCF	1,133,148.03	1,167,596.80	1,185,757.74	1,168,868.24	1,204,241.10	1,199,865.22	1,201,412.55	1,214,416.17	1,197,723.28	1,235,668.34
CH <sub>4</sub> emissions without CH <sub>4</sub> from LULUCF	41,392.62	41,460.43	41,505.28	40,278.00	39,501.20	37,592.73	39,029.56	38,962.32	38,216.42	38,470.09
CH <sub>4</sub> emissions with CH <sub>4</sub> from LULUCF	41,463.51	41,524.44	41,571.98	40,349.75	39,582.11	37,653.66	39,099.96	39,029.18	38,275.10	38,528.14
N <sub>2</sub> O emissions without N <sub>2</sub> O from LULUCF	33,581.93	27,496.64	30,062.27	26,531.75	26,049.92	25,882.62	25,899.70	25,510.95	25,533.58	24,971.76
N <sub>2</sub> O emissions with N <sub>2</sub> O from LULUCF	33,873.98	27,783.78	30,343.75	26,809.20	26,323.79	26,146.17	26,156.75	25,760.31	25,775.07	25,205.59
HFCs	23,740.46	24,365.53	22,846.61	19,451.82	16,218.01	16,200.76	12,379.29	12,724.24	14,548.01	16,602.99
PFCs	16,568.48	13,118.06	11,873.11	9,878.47	9,199.44	8,854.21	9,216.64	8,623.35	8,998.78	7,916.85
Unspecified mix of HFCs and PFCs										
SF <sub>6</sub>	13,224.10	9,176.62	7,031.36	6,066.02	5,735.48	5,406.31	5,258.70	5,063.86	5,243.91	4,754.51
NF <sub>3</sub>	172.65	282.59	186.01	195.05	271.72	299.14	367.36	1,249.87	1,093.43	1,210.12
<b>Total (without LULUCF)</b>	1,345,380.62	1,367,562.86	1,386,009.47	1,358,169.38	1,389,753.73	1,392,092.45	1,388,983.19	1,396,510.56	1,375,823.04	1,412,158.22
<b>Total (with LULUCF)</b>	1,262,191.20	1,283,847.82	1,299,610.57	1,271,618.55	1,301,571.65	1,294,425.46	1,293,891.26	1,306,866.97	1,291,657.58	1,329,886.54
<b>Total (without LULUCF, with indirect)</b>	NA									
<b>Total (with LULUCF, with indirect)</b>	NA									
<i>GREENHOUSE GAS SOURCE AND SINK CATEGORIES</i>										
1. Energy	1,153,101.85	1,188,228.51	1,208,302.92	1,194,000.75	1,233,537.84	1,239,105.19	1,238,623.17	1,245,671.00	1,224,055.56	1,260,846.54
2. Industrial processes and product use	121,457.94	108,626.56	106,591.43	95,478.34	88,436.76	87,046.63	83,710.04	84,728.60	87,324.77	86,359.92
3. Agriculture	39,107.61	39,481.63	40,103.68	39,505.88	39,645.81	38,152.35	39,760.61	40,015.02	39,639.70	40,811.61
4. Land Use, Land-Use Change and Forestry <sup>b</sup>	-83,189.42	-83,715.04	-86,398.90	-86,550.83	-88,182.08	-97,666.98	-95,091.93	-89,643.58	-84,165.46	-82,271.69
5. Waste	31,713.22	31,226.17	31,011.44	29,184.41	28,133.32	27,788.27	26,889.38	26,095.94	24,803.02	24,140.15
6. Other	NO									
<b>Total (including LULUCF)</b>	1,262,191.20	1,283,847.82	1,299,610.57	1,271,618.55	1,301,571.65	1,294,425.46	1,293,891.26	1,306,866.97	1,291,657.58	1,329,886.54

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

Table 1

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

GREENHOUSE GAS EMISSIONS	2008	2009	2010	2011	2012	2013	Change from base to latest reported year
	(%)						
CO <sub>2</sub> emissions without net CO <sub>2</sub> from LULUCF	1,233,950.5	1,161,132.87	1,211,534.6	1,260,759.6	1,295,500.4	1,310,691.4	13.54
CO <sub>2</sub> emissions with net CO <sub>2</sub> from LULUCF	1,162,288.5	1,094,286.21	1,141,892.6	1,191,262.2	1,222,479.3	1,245,764.4	13.72
CH <sub>4</sub> emissions without CH <sub>4</sub> from LULUCF	38,268.88	37,192.74	38,263.04	37,263.38	36,420.43	36,042.07	-25.82
CH <sub>4</sub> emissions with CH <sub>4</sub> from LULUCF	38,349.85	37,257.91	38,322.66	37,323.99	36,476.35	36,099.86	-25.81
N <sub>2</sub> O emissions without N <sub>2</sub> O from LULUCF	24,091.64	23,630.81	23,300.62	22,827.33	22,484.83	22,458.07	-29.61
N <sub>2</sub> O emissions with N <sub>2</sub> O from LULUCF	24,319.80	23,851.38	23,516.33	23,040.18	22,694.47	22,667.43	-29.69
HFCs	19,152.64	20,779.51	23,114.01	25,847.20	29,087.58	31,776.63	99.45
PFCs	5,743.40	4,046.87	4,249.54	3,755.45	3,436.33	3,280.06	-49.84
Unspecified mix of HFCs and PFCs							
SF <sub>6</sub>	4,206.12	2,474.65	2,468.45	2,299.56	2,299.32	2,165.76	-83.15
NF <sub>3</sub>	1,173.16	1,166.68	1,369.46	1,561.30	1,255.57	1,360.96	4,038.06
<b>Total (without LULUCF)</b>	1,326,586.4	1,250,424.13	1,304,299.7	1,354,313.8	1,390,484.5	1,407,774.9	10.83
<b>Total (with LULUCF)</b>	1,255,233.5	1,183,863.21	1,234,933.1	1,285,089.9	1,317,728.9	1,343,115.1	10.84
<b>Total (without LULUCF, with indirect)</b>	NA	NA	NA	NA	NA	NA	
<b>Total (with LULUCF, with indirect)</b>	NA	NA	NA	NA	NA	NA	

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2008	2009	2010	2011	2012	2013	Change from base to latest reported year
	(%)						
1. Energy	1,178,817.6	1,113,941.56	1,163,142.6	1,212,514.4	1,246,241.8	1,259,498.7	15.56
2. Industrial processes and product use	82,108.16	74,787.14	78,197.45	79,990.29	82,636.66	86,929.33	-20.43
3. Agriculture	40,275.22	39,463.76	40,697.06	40,260.22	39,734.95	39,530.76	-7.91
4. Land Use, Land-Use Change and Forestry <sup>b</sup>	-71,352.89	-66,560.92	-69,366.58	-69,223.96	-72,755.55	-64,659.80	10.56
5. Waste	25,385.38	22,231.68	22,262.58	21,548.96	21,871.09	21,816.18	-22.64
6. Other	NO	NO	NO	NO	NO	NO	
<b>Total (including LULUCF)</b>	1,255,233.5	1,183,863.21	1,234,933.1	1,285,089.9	1,317,728.9	1,343,115.1	10.84

## Notes:

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

(2) 2011 is the latest reported inventory year.

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

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

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

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

## Custom Footnotes

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

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year <sup>a</sup>	1990	1991	1992	1993	1994	1995	1996	1997
	kt								
<b>I. Energy</b>									
A. Fuel combustion (sectoral approach)	1,076,548.33	1,076,548.33	1,084,086.37	1,092,915.15	1,088,031.65	1,145,042.04	1,157,786.15	1,169,854.02	1,169,496.20
1. Energy industries	352,782.85	352,782.85	355,881.04	362,715.03	346,422.62	387,366.79	377,028.59	379,153.02	377,005.39
2. Manufacturing industries and construction	378,577.64	378,577.64	373,709.40	366,701.45	365,726.39	375,193.89	381,196.03	385,476.83	385,503.15
3. Transport	200,214.98	200,214.98	212,672.57	218,928.64	222,568.29	231,618.00	240,453.11	246,923.50	248,301.34
4. Other sectors	144,972.86	144,972.86	141,823.37	144,570.04	153,314.35	150,863.36	159,108.43	158,300.67	158,686.32
5. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO
B. Fugitive emissions from fuels	191.57	191.57	214.87	208.31	211.66	231.05	521.46	570.68	580.36
1. Solid fuels	5.32	5.32	4.80	4.28	3.60	2.96	2.41	2.11	2.00
2. Oil and natural gas and other emissions from energy production	186.25	186.25	210.07	204.03	208.06	228.10	519.05	568.57	578.36
C. CO <sub>2</sub> transport and storage	NO, NE	NO, NE	NO, NE	NO, NE	NO, NE	NO, NE	NO, NE	NO, NE	NO, NE
<b>2. Industrial processes</b>	63,926.78	63,926.78	65,038.08	65,014.06	63,689.00	65,151.78	65,387.05	65,880.14	63,183.32
A. Mineral industry	49,220.88	49,220.88	50,538.96	50,957.31	50,243.71	51,255.21	51,134.50	51,476.04	48,825.65
B. Chemical industry	6,976.74	6,976.74	6,949.83	6,801.03	6,346.47	6,765.85	6,941.39	7,044.56	7,029.19
C. Metal industry	7,272.68	7,272.68	7,091.31	6,795.75	6,651.97	6,655.80	6,849.34	6,870.40	6,834.15
D. Non-energy products from fuels and solvent use	392.21	392.21	391.21	394.69	387.28	408.11	390.27	409.45	408.24
E. Electronic industry									
F. Product uses as ODS substitutes									
G. Other product manufacture and use	NO	NO	NO	NO	NO	NO	NO	NO	NO
H. Other	64.27	64.27	66.77	65.27	59.56	66.80	71.54	79.67	86.09
<b>3. Agriculture</b>	608.88	608.88	547.88	493.01	523.52	342.54	359.13	349.62	371.50
A. Enteric fermentation									
B. Manure management									
C. Rice cultivation									
D. Agricultural soils									
E. Prescribed burning of savannas									
F. Field burning of agricultural residues									
G. Liming	550.24	550.24	527.37	477.14	481.58	292.76	303.53	292.74	303.65
H. Urea application	58.64	58.64	20.51	15.87	41.94	49.79	55.60	56.88	67.85
I. Other carbon-containing fertilizers	NO	NO	NO	NO	NO	NO	NO	NO	NO
J. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO
<b>4. Land Use, Land-Use Change and Forestry</b>	-58,890.79	-58,890.79	-67,026.65	-69,580.36	-73,602.74	-72,903.31	-74,466.09	-79,070.83	-82,445.39
A. Forest land	-79,073.12	-79,073.12	-86,228.01	-86,576.72	-86,922.70	-87,267.10	-87,611.89	-91,283.57	-91,123.69
B. Cropland	12,237.34	12,237.34	10,889.62	7,492.39	5,588.04	6,389.62	5,610.91	3,970.86	3,283.78
C. Grassland	1,129.06	1,129.06	856.90	136.51	-195.11	110.69	698.33	345.18	58.58
D. Wetlands	90.24	90.24	80.55	253.20	140.59	116.37	357.69	635.14	120.52
E. Settlements	4,234.99	4,234.99	5,100.63	5,723.54	3,639.43	2,450.18	2,291.89	1,466.80	1,024.79
F. Other land	1,543.97	1,543.97	1,727.87	1,383.16	1,696.87	1,527.94	1,293.31	1,210.34	1,574.04
G. Harvested wood products	946.72	946.72	545.79	2,007.56	2,450.13	3,768.99	2,893.66	4,584.42	2,616.58
H. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>5. Waste</b>	13,127.19	13,127.19	13,143.50	14,190.78	13,943.46	16,456.79	16,708.85	17,125.19	17,712.12
A. Solid waste disposal	NO, NE	NO, NE	NO, NE	NO, NE	NO, NE	NO, NE	NO, NE	NO, NE	NO, NE
B. Biological treatment of solid waste									
C. Incineration and open burning of waste	12,424.36	12,424.36	12,457.05	13,491.88	13,262.72	15,754.88	16,041.03	16,484.72	17,056.89
D. Waste water treatment and discharge									
E. Other	702.83	702.83	686.45	698.90	680.75	701.91	667.83	640.47	655.23
<b>6. Other (as specified in the summary table in CRF)</b>	NO	NO	NO	NO	NO	NO	NO	NO	NO
<b>Memo items:</b>									
<b>International bunkers</b>	30,829.18	30,829.18	32,531.98	32,937.28	34,935.20	36,093.69	38,179.77	30,958.25	35,432.29
Aviation	13,189.32	13,189.32	13,919.12	14,216.76	13,856.19	15,066.49	16,922.99	18,441.91	19,134.37
Navigation	17,639.86	17,639.86	18,612.86	18,720.51	21,079.01	21,027.20	21,256.78	12,516.34	16,297.92
<b>Multilateral operations</b>	NO	NO	NO	NO	NO	NO	NO	NO	NO
<b>CO<sub>2</sub> emissions from biomass</b>	34,806.16	34,806.16	35,541.54	35,203.12	34,511.82	34,982.56	36,350.02	36,769.89	37,825.43
<b>CO<sub>2</sub> captured</b>	NO	NO	NO	NO	NO	NO	NO	NO	NO
<b>Long-term storage of C in waste disposal sites</b>	NE	NE	NE	NE	NE	NE	NE	NE	NE
<b>Indirect N<sub>2</sub>O</b>									
<b>Indirect CO<sub>2</sub> (3)</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Total CO<sub>2</sub> equivalent emissions without land use, land-use change and forestry</b>	1,154,402.75	1,154,402.75	1,163,030.69	1,172,821.31	1,166,399.29	1,227,224.21	1,240,762.63	1,253,779.64	1,251,343.50
<b>Total CO<sub>2</sub> equivalent emissions with land use, land-use change and forestry</b>	1,095,511.96	1,095,511.96	1,096,004.04	1,103,240.95	1,092,796.55	1,154,320.90	1,166,296.54	1,174,708.81	1,168,898.11
<b>Total CO<sub>2</sub> equivalent emissions, including indirect CO<sub>2</sub>, without land use, land-use change and forestry</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Total CO<sub>2</sub> equivalent emissions, including indirect CO<sub>2</sub>, with land use, land-use change and forestry</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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

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GREENHOUSE GAS SOURCE AND SINK CATEGORIES	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
<b>1. Energy</b>										
A. Fuel combustion (sectoral approach)	1,140,858.0	1,175,846.7	1,196,028.2	1,181,985.9	1,222,338.1	1,228,244.9	1,227,964.0	1,234,927.7	1,213,435.0	1,250,204.5
1. Energy industries	364,997.08	384,032.34	393,060.45	383,003.45	414,184.08	430,909.93	427,939.46	447,958.47	436,467.36	498,749.30
2. Manufacturing industries and construction	362,343.07	369,107.61	377,904.63	372,388.74	383,546.04	382,591.71	384,665.06	373,026.83	377,189.94	363,273.55
3. Transport	246,427.52	250,254.29	249,013.71	253,036.44	248,697.82	244,439.68	238,588.32	232,726.97	228,263.03	226,722.19
4. Other sectors	167,090.39	172,452.48	176,049.41	173,557.30	175,910.16	170,303.59	176,771.16	181,215.50	171,514.70	161,459.46
5. Other	NO									
B. Fugitive emissions from fuels	498.62	539.32	511.56	548.17	524.57	505.76	477.66	507.77	553.11	615.64
1. Solid fuels	1.82	1.75	1.60	1.35	0.75	0.67	0.64	0.61	0.59	0.56
2. Oil and natural gas and other emissions from energy production	496.80	537.57	509.97	546.82	523.81	505.09	477.02	507.16	552.52	615.09
C. CO2 transport and storage	NO, NE									
<b>2. Industrial processes</b>	57,271.43	57,413.19	57,880.39	56,477.04	53,737.03	52,968.44	52,834.19	53,920.03	54,047.12	53,260.60
A. Mineral industry	43,848.16	43,563.47	43,897.34	42,953.24	40,467.10	40,130.95	39,804.58	41,213.62	41,179.79	40,182.19
B. Chemical industry	6,396.05	6,906.06	6,771.22	6,310.97	6,217.57	6,015.29	6,097.01	5,757.37	5,838.47	5,931.03
C. Metal industry	6,545.61	6,463.33	6,739.86	6,762.89	6,598.21	6,366.89	6,483.63	6,498.03	6,573.56	6,704.75
D. Non-energy products from fuels and solvent use	395.13	391.00	385.48	371.72	374.29	369.98	362.67	360.96	367.78	356.47
E. Electronic industry										
F. Product uses as ODS substitutes										
G. Other product manufacture and use	NO									
H. Other	86.49	89.33	86.50	78.22	79.87	85.33	86.29	90.05	87.52	86.16
<b>3. Agriculture</b>	376.93	370.29	442.53	367.68	408.14	430.19	402.22	410.56	383.48	500.08
A. Enteric fermentation										
B. Manure management										
C. Rice cultivation										
D. Agricultural soils										
E. Prescribed burning of savannas										
F. Field burning of agricultural residues										
G. Liming	300.00	293.57	332.90	247.35	269.92	246.40	236.30	231.29	230.36	325.00
H. Urea application	76.93	76.73	109.63	120.34	138.22	183.79	165.92	179.27	153.12	175.08
I. Other carbon-containing fertilizers	NO									
J. Other	NO									
<b>4. Land Use, Land-Use Change and Forestry</b>	-83,552.36	-84,066.20	-86,747.08	-86,900.03	-88,536.86	-97,991.47	-95,419.39	-89,959.79	-84,465.64	-82,563.56
A. Forest land	-90,962.75	-90,802.50	-90,641.94	-90,482.49	-90,321.89	-99,042.54	-98,527.80	-92,664.34	-86,820.31	-85,555.91
B. Cropland	3,286.26	2,228.95	208.59	111.97	398.89	-251.64	2,670.16	2,306.88	1,498.68	4,869.08
C. Grassland	33.31	-389.92	44.29	-254.93	-523.70	-1,196.36	-936.48	-1,030.68	-473.20	-988.41
D. Wetlands	483.21	455.23	425.38	386.21	94.78	62.69	56.34	56.62	41.45	33.26
E. Settlements	964.01	512.51	91.52	-180.48	-1,098.58	-1,216.10	-1,222.25	-487.50	-259.92	-1,260.31
F. Other land	1,195.34	1,301.32	955.13	1,018.20	944.70	768.74	782.45	157.40	191.17	112.27
G. Harvested wood products	1,448.27	2,628.22	2,169.95	2,501.48	1,968.93	2,883.73	1,758.19	1,701.83	1,356.48	226.46
H. Other	NA									
<b>5. Waste</b>	17,695.35	17,493.48	17,642.14	16,389.46	15,770.11	15,707.40	15,153.87	14,609.82	13,770.18	13,651.08
A. Solid waste disposal	NO, NE									
B. Biological treatment of solid waste										
C. Incineration and open burning of waste	17,086.23	16,840.90	16,986.23	15,758.93	15,193.07	15,190.87	14,647.17	14,103.00	13,247.82	13,089.88
D. Waste water treatment and discharge										
E. Other	609.12	652.58	655.91	630.53	577.05	516.53	506.70	506.81	522.36	561.20
<b>6. Other (as specified in the summary table in CRF)</b>	NO									
<b>Memo items:</b>										
<b>International bunkers</b>	37,361.08	36,022.49	36,731.88	33,571.42	36,728.93	37,506.71	39,113.12	41,564.88	38,991.92	37,259.15
Aviation	20,001.55	19,576.46	19,542.61	18,721.34	21,149.32	20,387.64	21,190.20	21,336.33	19,964.61	18,358.58
Navigation	17,359.53	16,446.03	17,189.28	14,850.08	15,579.61	17,119.07	17,922.92	20,228.55	19,027.31	18,900.57
<b>Multilateral operations</b>	NO									
<b>CO2 emissions from biomass</b>	36,535.94	37,686.59	39,515.98	38,105.84	40,010.00	41,925.52	42,060.47	45,738.12	46,287.63	46,980.95
<b>CO2 captured</b>	NO	NO	NO	NO	NO	NO	0.04	0.12	0.36	0.37
<b>Long-term storage of C in waste disposal sites</b>	NE									
<b>Indirect N2O</b>										
<b>Indirect CO2 (3)</b>	NA									
<b>Total CO2 equivalent emissions without land use, land-use change and forestry</b>	1,216,700.3	1,251,663.0	1,272,504.8	1,255,768.2	1,292,777.9	1,297,856.6	1,296,831.9	1,304,375.9	1,282,188.9	1,318,231.9
<b>Total CO2 equivalent emissions with land use, land-use change and forestry</b>	1,133,148.0	1,167,596.8	1,185,757.7	1,168,868.2	1,204,241.1	1,199,865.2	1,201,412.5	1,214,416.1	1,197,723.2	1,235,668.3
<b>Total CO2 equivalent emissions, including indirect CO2, without land use, land-use change and forestry</b>	NA									
<b>Total CO2 equivalent emissions, including indirect CO2, with land use, land-use change and forestry</b>	NA									

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

**Emission trends (CO<sub>2</sub>)**  
**(Sheet 3 of 3)**

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2008	2009	2010	2011	2012	2013	Change from base to latest reported year
	%						
<b>1. Energy</b>							
A. Fuel combustion (sectoral approach)	1,168,545.1	1,104,197.4	1,152,909.5	1,202,747.6	1,236,532.9	1,249,822.0	16.10
1. Energy industries	473,839.72	436,770.86	461,180.96	518,820.96	561,648.47	566,643.99	60.62
2. Manufacturing industries and construction	330,170.23	301,475.77	336,976.46	333,428.35	332,669.49	338,129.90	-10.68
3. Transport	218,193.17	214,763.95	215,467.45	212,651.37	217,611.70	215,803.65	7.79
4. Other sectors	146,342.00	151,186.84	139,284.69	137,846.94	124,603.32	129,244.52	-10.85
5. Other	NO	NO	NO	NO	NO	NO	
B. Fugitive emissions from fuels	565.32	500.92	474.55	477.48	490.27	479.56	150.33
1. Solid fuels	0.54	0.53	0.52	0.51	0.50	0.49	-90.79
2. Oil and natural gas and other emissions from energy production	564.78	500.39	474.03	476.97	489.77	479.07	157.22
C. CO <sub>2</sub> transport and storage	NO, NE						
<b>2. Industrial processes</b>	49,135.80	43,490.86	44,672.07	44,541.71	44,784.50	46,551.39	-27.18
A. Mineral industry	37,413.33	32,770.04	32,754.05	33,103.30	33,698.91	35,111.89	-28.66
B. Chemical industry	5,073.50	4,837.17	5,389.64	5,067.05	4,617.79	4,757.48	-31.81
C. Metal industry	6,248.45	5,479.45	6,113.67	5,979.89	6,102.40	6,300.60	-13.37
D. Non-energy products from fuels and solvent use	328.97	332.92	338.85	315.67	288.99	299.09	-23.74
E. Electronic industry							
F. Product uses as ODS substitutes							
G. Other product manufacture and use	NO	NO	NO	NO	NO	NO	
H. Other	71.55	71.29	75.85	75.81	76.41	82.33	28.10
<b>3. Agriculture</b>	439.98	390.10	402.94	408.54	531.74	531.74	-12.67
A. Enteric fermentation							
B. Manure management							
C. Rice cultivation							
D. Agricultural soils							
E. Prescribed burning of savannas							
F. Field burning of agricultural residues							
G. Liming	305.74	270.15	242.88	246.78	369.97	369.97	-32.76
H. Urea application	134.24	119.95	160.06	161.77	161.77	161.77	175.84
I. Other carbon-containing fertilizers	NO	NO	NO	NO	NO	NO	
J. Other	NO	NO	NO	NO	NO	NO	
<b>4. Land Use, Land-Use Change and Forestry</b>	-71,662.03	-66,846.66	-69,641.91	-69,497.41	-73,021.11	-64,926.94	10.25
A. Forest land	-80,350.76	-75,507.11	-76,043.80	-77,808.29	-77,393.29	-68,162.38	-13.80
B. Cropland	10,280.48	7,917.24	5,376.11	5,690.14	4,744.51	3,651.84	-70.16
C. Grassland	-1,335.87	-266.39	-155.71	163.09	-178.94	-233.30	-120.66
D. Wetlands	34.36	69.20	51.18	45.13	31.67	45.03	-50.10
E. Settlements	-680.78	-489.55	18.93	-1,025.41	-680.86	-899.70	-121.24
F. Other land	164.06	138.66	204.50	120.68	147.73	101.08	-93.45
G. Harvested wood products	226.47	1,291.29	906.86	3,317.25	308.06	570.47	-39.74
H. Other	NA	NA	NA	NA	NA	NA	
<b>5. Waste</b>	15,264.36	12,553.57	13,075.48	12,584.32	13,160.99	13,306.68	1.37
A. Solid waste disposal	NO, NE						
B. Biological treatment of solid waste							
C. Incineration and open burning of waste	14,733.95	12,039.88	12,548.56	12,060.19	12,645.93	12,760.07	2.70
D. Waste water treatment and discharge							
E. Other	530.41	513.69	526.91	524.13	515.07	546.61	-22.23
<b>6. Other (as specified in the summary table in CRF)</b>	NO	NO	NO	NO	NO	NO	
<b>Memo items:</b>							
<b>International bunkers</b>	34,849.64	30,686.03	31,179.83	31,636.35	32,349.06	33,186.32	7.65
Aviation	17,517.99	15,372.73	16,295.33	18,249.69	19,140.10	19,508.32	47.91
Navigation	17,331.65	15,313.30	14,884.50	13,386.66	13,208.96	13,678.00	-22.46
<b>Multilateral operations</b>	NO	NO	NO	NO	NO	NO	
<b>CO<sub>2</sub> emissions from biomass</b>	45,350.20	42,335.18	57,578.48	57,206.63	58,058.94	59,517.40	71.00
<b>CO<sub>2</sub> captured</b>	NO	NO	NO	NO	NO	NO	
<b>Long-term storage of C in waste disposal sites</b>	NE	NE	NE	NE	NE	NE	
<b>Indirect N<sub>2</sub>O</b>							
<b>Indirect CO<sub>2</sub> (3)</b>	NA	NA	NA	NA	NA	NA	
<b>Total CO<sub>2</sub> equivalent emissions without land use, land-use change and forestry</b>	1,233,950.5	1,161,132.8	1,211,534.6	1,260,759.6	1,295,500.4	1,310,691.4	13.54
<b>Total CO<sub>2</sub> equivalent emissions with land use, land-use change and forestry</b>	1,162,288.5	1,094,286.2	1,141,892.6	1,191,262.2	1,222,479.3	1,245,764.4	13.72
<b>Total CO<sub>2</sub> equivalent emissions, including indirect CO<sub>2</sub>, without land use, land-use change and forestry</b>	NA	NA	NA	NA	NA	NA	
<b>Total CO<sub>2</sub> equivalent emissions, including indirect CO<sub>2</sub>, with land use, land-use change and forestry</b>	NA	NA	NA	NA	NA	NA	

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

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

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

Custom Footnotes

Emission trends (CH<sub>4</sub>)

(Sheet 1 of 3)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year <sup>a</sup>	1990	1991	1992	1993	1994	1995	1996	1997
	kt								
<b>1. Energy</b>									
A. Fuel combustion (sectoral approach)	57.02	57.02	56.44	56.04	56.90	57.14	58.92	58.37	55.62
1. Energy industries	17.38	17.38	17.05	15.89	15.72	16.19	16.27	15.88	13.64
2. Manufacturing industries and construction	17.63	17.63	17.18	16.95	17.01	17.22	17.47	18.32	17.44
3. Transport	12.29	12.29	12.59	12.74	12.59	12.73	13.03	13.32	13.44
4. Other sectors	9.73	9.73	9.62	10.47	11.58	11.00	12.14	10.86	11.10
5. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO
B. Fugitive emissions from fuels	198.93	198.93	178.77	160.19	134.62	117.48	105.88	92.54	87.85
1. Solid fuels	190.42	190.42	169.71	151.12	125.25	107.95	95.76	82.40	77.32
2. Oil and natural gas and other emissions from energy production	8.51	8.51	9.06	9.07	9.37	9.52	10.12	10.14	10.53
C. CO <sub>2</sub> transport and storage									
<b>2. Industrial processes</b>	2.40	2.40	2.31	2.19	2.07	2.22	2.31	2.22	2.20
A. Mineral industry									
B. Chemical industry	1.47	1.47	1.43	1.34	1.28	1.39	1.46	1.35	1.33
C. Metal industry	0.92	0.92	0.87	0.85	0.80	0.83	0.85	0.87	0.87
D. Non-energy products from fuels and solvent use	NO	NO	NO	NO	NO	NO	NO	NO	NO
E. Electronic industry									
F. Product uses as ODS substitutes									
G. Other product manufacture and use	NO	NO	NO	NO	NO	NO	NO	NO	NO
H. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO
<b>3. Agriculture</b>	1,193.48	1,193.48	1,151.04	1,221.31	1,042.75	1,269.94	1,207.59	1,180.16	1,166.70
A. Enteric fermentation	362.57	362.57	369.83	372.49	368.65	363.01	359.73	356.48	355.34
B. Manure management	134.15	134.15	134.64	133.69	130.53	126.87	125.85	124.10	122.34
C. Rice cultivation	691.76	691.76	641.96	710.36	539.24	775.53	717.66	695.34	684.89
D. Agricultural soils	NO	NO	NO	NO	NO	NO	NO	NO	NO
E. Prescribed burning of savannas	NO	NO	NO	NO	NO	NO	NO	NO	NO
F. Field burning of agricultural residues	4.99	4.99	4.61	4.76	4.33	4.53	4.35	4.24	4.12
G. Liming									
H. Urea application									
I. Other carbon-containing fertilizers									
J. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO
<b>4. Land use, land-use change and forestry</b>	2.92	2.92	2.79	2.66	3.57	3.25	2.80	3.72	3.97
A. Forest land	0.40	0.40	0.30	0.21	1.14	0.84	0.41	1.35	1.63
B. Cropland	2.43	2.43	2.40	2.37	2.34	2.32	2.29	2.27	2.26
C. Grassland	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
D. Wetlands	NO, NA, NE	NO, NA, NE	NO, NA, NE	NO, NA, NE	NO, NA, NE	NO, NA, NE	NO, NA, NE	NO, NA, NE	NO, NA, NE
E. Settlements	NO	NO	NO	NO	NO	NO	NO	NO	NO
F. Other land	NO	NO	NO	NO	NO	NO	NO	NO	NO
G. Harvested wood products									
H. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>5. Waste</b>	491.64	491.64	485.93	484.11	476.38	469.50	458.30	447.69	435.77
A. Solid waste disposal	368.82	368.82	366.05	365.07	359.26	354.54	344.85	335.74	325.29
B. Biological treatment of solid waste	7.79	7.79	7.65	7.67	7.69	7.63	7.65	7.67	7.72
C. Incineration and open burning of waste	0.64	0.64	0.62	0.64	0.64	0.69	0.71	0.73	0.70
D. Waste water treatment and discharge	114.39	114.39	111.61	110.73	108.79	106.64	105.10	103.56	102.06
E. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>6. Other (as specified in the summary table in CRF)</b>	NO	NO	NO	NO	NO	NO	NO	NO	NO
<b>Total CH<sub>4</sub> emissions without CH<sub>4</sub> from LULUCF</b>	1,943.45	1,943.45	1,874.49	1,923.84	1,712.72	1,916.28	1,833.01	1,780.98	1,748.13
<b>Total CH<sub>4</sub> emissions with CH<sub>4</sub> from LULUCF</b>	1,946.37	1,946.37	1,877.28	1,926.50	1,716.29	1,919.53	1,835.81	1,784.70	1,752.10
<b>Memo items:</b>									
<b>International bunkers</b>	1.77	1.77	1.87	1.88	2.11	2.11	2.15	1.32	1.69
Aviation	0.09	0.09	0.10	0.10	0.10	0.11	0.12	0.13	0.14
Navigation	1.68	1.68	1.77	1.78	2.01	2.00	2.03	1.19	1.55
<b>Multilateral operations</b>	NO	NO	NO	NO	NO	NO	NO	NO	NO
<b>CO<sub>2</sub> emissions from biomass</b>									
<b>CO<sub>2</sub> captured</b>									
<b>Long-term storage of C in waste disposal sites</b>									
<b>Indirect N<sub>2</sub>O</b>									
<b>Indirect CO<sub>2</sub> (3)</b>									

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

**Emission trends (CH<sub>4</sub>)**  
(Sheet 2 of 3)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
<b>1. Energy</b>										
A. Fuel combustion (sectoral approach)	53.46	53.98	54.12	51.48	52.22	52.30	56.86	59.47	61.42	61.59
1. Energy industries	12.75	12.28	10.42	8.24	7.99	7.69	8.69	8.72	8.81	9.98
2. Manufacturing industries and construction	15.57	15.36	17.06	16.68	17.97	19.43	20.48	20.89	22.76	23.07
3. Transport	13.24	13.23	13.18	12.92	12.51	11.92	11.15	10.47	9.83	9.26
4. Other sectors	11.89	13.10	13.46	13.64	13.75	13.26	16.53	19.40	20.02	19.28
5. Other	NO									
B. Fugitive emissions from fuels	80.31	78.14	73.43	64.01	42.32	40.70	39.06	39.06	39.30	39.00
1. Solid fuels	69.99	67.72	62.52	53.19	30.73	28.85	26.87	26.18	25.75	24.37
2. Oil and natural gas and other emissions from energy production	10.33	10.42	10.91	10.82	11.58	11.86	12.20	12.88	13.54	14.63
C. CO <sub>2</sub> transport and storage										
<b>2. Industrial processes</b>	2.10	2.08	2.17	2.07	2.11	2.01	2.15	2.15	2.18	2.04
A. Mineral industry										
B. Chemical industry	1.34	1.31	1.37	1.32	1.32	1.22	1.34	1.35	1.37	1.21
C. Metal industry	0.77	0.77	0.80	0.75	0.79	0.79	0.81	0.80	0.82	0.82
D. Non-energy products from fuels and solvent use	NO									
E. Electronic industry										
F. Product uses as ODS substitutes										
G. Other product manufacture and use	NO									
H. Other	NO									
<b>3. Agriculture</b>	1,098.89	1,116.38	1,135.28	1,119.64	1,121.38	1,059.25	1,127.49	1,135.19	1,117.15	1,142.18
A. Enteric fermentation	353.54	351.28	347.29	348.41	345.18	340.55	332.77	331.46	332.20	332.81
B. Manure management	120.14	117.83	115.18	114.95	114.65	112.89	110.22	109.34	107.06	105.39
C. Rice cultivation	621.27	643.39	669.03	652.53	657.92	602.35	681.17	691.01	674.60	700.78
D. Agricultural soils	NO									
E. Prescribed burning of savannas	NO									
F. Field burning of agricultural residues	3.95	3.87	3.77	3.75	3.64	3.47	3.33	3.38	3.28	3.19
G. Liming										
H. Urea application										
I. Other carbon-containing fertilizers										
J. Other	NO									
<b>4. Land use, land-use change and forestry</b>	2.84	2.56	2.67	2.87	3.24	2.44	2.82	2.67	2.35	2.32
A. Forest land	0.51	0.25	0.37	0.59	0.97	0.19	0.57	0.43	0.12	0.10
B. Cropland	2.24	2.22	2.21	2.19	2.17	2.16	2.15	2.15	2.14	2.13
C. Grassland	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
D. Wetlands	NO, NA, NE									
E. Settlements	NO									
F. Other land	NO									
G. Harvested wood products										
H. Other	NA									
<b>5. Waste</b>	420.94	407.84	395.22	373.91	362.01	349.45	335.62	322.62	308.61	294.00
A. Solid waste disposal	312.61	300.68	289.55	277.44	265.30	252.95	240.39	228.14	215.33	203.17
B. Biological treatment of solid waste	7.68	7.71	7.76	7.82	9.90	11.64	12.00	13.58	13.98	13.50
C. Incineration and open burning of waste	0.69	0.67	0.63	0.60	0.93	0.80	0.73	0.68	0.63	0.58
D. Waste water treatment and discharge	99.95	98.78	97.27	88.06	85.88	84.05	82.49	80.22	78.67	76.75
E. Other	NA									
<b>6. Other (as specified in the summary table in CRF)</b>	NO									
<b>Total CH<sub>4</sub> emissions without CH<sub>4</sub> from LULUCF</b>	1,655.70	1,658.42	1,660.21	1,611.12	1,580.05	1,503.71	1,561.18	1,558.49	1,528.66	1,538.80
<b>Total CH<sub>4</sub> emissions with CH<sub>4</sub> from LULUCF</b>	1,658.54	1,660.98	1,662.88	1,613.99	1,583.28	1,506.15	1,564.00	1,561.17	1,531.00	1,541.13
<b>Memo items:</b>										
<b>International bunkers</b>	1.80	1.71	1.78	1.55	1.63	1.78	1.86	2.08	1.95	1.93
Aviation	0.14	0.14	0.14	0.13	0.15	0.14	0.15	0.15	0.14	0.13
Navigation	1.65	1.57	1.64	1.42	1.48	1.63	1.71	1.93	1.81	1.80
<b>Multilateral operations</b>	NO									
<b>CO<sub>2</sub> emissions from biomass</b>										
<b>CO<sub>2</sub> captured</b>										
<b>Long-term storage of C in waste disposal sites</b>										
<b>Indirect N<sub>2</sub>O</b>										
<b>Indirect CO<sub>2</sub> (3)</b>										

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

**Emission trends (CH<sub>4</sub>)**

(Sheet 3 of 3)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2008	2009	2010	2011	2012	2013	Change from base to latest reported year
	%						
<b>1. Energy</b>							
A. Fuel combustion (sectoral approach)	61.77	58.37	81.87	67.39	67.49	66.71	17.00
1. Energy industries	12.72	12.56	12.74	13.21	13.92	11.73	-32.52
2. Manufacturing industries and construction	22.03	21.83	24.02	19.18	19.80	19.73	11.90
3. Transport	8.46	7.91	7.50	7.16	7.05	6.78	-44.80
4. Other sectors	18.57	16.07	37.62	27.83	26.71	28.48	192.73
5. Other	NO	NO	NO	NO	NO	NO	
B. Fugitive emissions from fuels	37.87	36.66	35.40	34.69	34.02	32.68	-83.57
1. Solid fuels	23.59	23.09	22.57	22.09	21.81	21.32	-88.80
2. Oil and natural gas and other emissions from energy production	14.28	13.57	12.83	12.60	12.22	11.35	33.40
C. CO <sub>2</sub> transport and storage							
<b>2. Industrial processes</b>	1.99	2.05	2.15	2.14	1.85	1.86	-22.57
A. Mineral industry							
B. Chemical industry	1.27	1.43	1.45	1.43	1.13	1.13	-23.69
C. Metal industry	0.72	0.62	0.71	0.72	0.72	0.73	-20.77
D. Non-energy products from fuels and solvent use	NO	NO	NO	NO	NO	NO	
E. Electronic industry							
F. Product uses as ODS substitutes							
G. Other product manufacture and use	NO	NO	NO	NO	NO	NO	
H. Other	NO	NO	NO	NO	NO	NO	
<b>3. Agriculture</b>	1,148.45	1,124.64	1,160.68	1,145.69	1,122.83	1,118.34	-6.30
A. Enteric fermentation	328.17	323.78	313.16	311.75	304.28	296.02	-18.35
B. Manure management	103.88	102.79	100.74	100.89	98.90	96.45	-28.10
C. Rice cultivation	713.32	695.08	743.86	730.18	716.84	723.09	4.53
D. Agricultural soils	NO	NO	NO	NO	NO	NO	
E. Prescribed burning of savannas	NO	NO	NO	NO	NO	NO	
F. Field burning of agricultural residues	3.08	2.99	2.91	2.88	2.80	2.77	-44.56
G. Liming							
H. Urea application							
I. Other carbon-containing fertilizers							
J. Other	NO	NO	NO	NO	NO	NO	
<b>4. Land use, land-use change and forestry</b>	3.24	2.61	2.38	2.42	2.24	2.31	-20.81
A. Forest land	1.02	0.41	0.20	0.25	0.08	0.16	-60.20
B. Cropland	2.12	2.11	2.10	2.08	2.07	2.06	-15.12
C. Grassland	0.09	0.09	0.09	0.09	0.09	0.09	1.69
D. Wetlands	NO, NA, NE						
E. Settlements	NO	NO	NO	NO	NO	NO	
F. Other land	NO	NO	NO	NO	NO	NO	
G. Harvested wood products							
H. Other	NA	NA	NA	NA	NA	NA	
<b>5. Waste</b>	280.67	265.99	250.43	240.62	230.63	222.10	-54.82
A. Solid waste disposal	189.14	176.85	164.56	154.66	146.30	138.55	-62.43
B. Biological treatment of solid waste	15.18	15.07	13.18	14.48	14.35	14.39	84.85
C. Incineration and open burning of waste	0.56	0.50	0.46	0.46	0.48	0.48	-25.49
D. Waste water treatment and discharge	75.79	73.58	72.23	71.02	69.51	68.68	-39.96
E. Other	NA	NA	NA	NA	NA	NA	
<b>6. Other (as specified in the summary table in CRF)</b>	NO	NO	NO	NO	NO	NO	
<b>Total CH<sub>4</sub> emissions without CH<sub>4</sub> from LULUCF</b>	1,530.76	1,487.71	1,530.52	1,490.54	1,456.82	1,441.68	-25.82
<b>Total CH<sub>4</sub> emissions with CH<sub>4</sub> from LULUCF</b>	1,533.99	1,490.32	1,532.91	1,492.96	1,459.05	1,443.99	-25.81
<b>Memo items:</b>							
<b>International bunkers</b>	1.78	1.57	1.53	1.40	1.39	1.37	-22.92
Aviation	0.12	0.11	0.12	0.13	0.14	0.13	43.80
Navigation	1.65	1.46	1.42	1.28	1.26	1.23	-26.63
<b>Multilateral operations</b>	NO	NO	NO	NO	NO	NO	
<b>CO<sub>2</sub> emissions from biomass</b>							
<b>CO<sub>2</sub> captured</b>							
<b>Long-term storage of C in waste disposal sites</b>							
<b>Indirect N<sub>2</sub>O</b>							
<b>Indirect CO<sub>2</sub> (3)</b>							

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

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

Custom Footnotes

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

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year <sup>a</sup>	1990	1991	1992	1993	1994	1995	1996	1997
	kt								
<b>1. Energy</b>									
A. Fuel combustion (sectoral approach)	22.59	22.59	23.43	23.84	24.29	25.28	27.36	27.96	28.72
1. Energy industries	4.02	4.02	4.14	4.13	4.26	4.53	5.83	6.00	6.24
2. Manufacturing industries and construction	4.60	4.60	4.84	4.97	5.30	5.75	6.06	6.29	6.63
3. Transport	13.26	13.26	13.76	14.00	13.88	14.12	14.52	14.78	14.93
4. Other sectors	0.71	0.71	0.70	0.74	0.85	0.87	0.95	0.89	0.92
5. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO
B. Fugitive emissions from fuels	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1. Solid fuels	NO, NE	NO, NE	NO, NE	NO, NE	NO, NE	NO, NE	NO, NE	NO, NE	NO, NE
2. Oil and natural gas and other emissions from energy production	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C. CO <sub>2</sub> transport and storage									
<b>2. Industrial processes</b>	33.26	33.26	31.65	31.54	30.64	34.26	33.94	37.31	39.33
A. Mineral industry									
B. Chemical industry	32.28	32.28	30.44	30.14	29.24	32.76	32.43	35.84	37.91
C. Metal industry	NO	NO	NO	NO	NO	NO	NO	NO	NO
D. Non-energy products from fuels and solvent use	NO	NO	NO	NO	NO	NO	NO	NO	NO
E. Electronic industry									
F. Product uses as ODS substitutes									
G. Other product manufacture and use	0.98	0.98	1.21	1.40	1.40	1.49	1.51	1.46	1.42
H. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO
<b>3. Agriculture</b>	41.88	41.88	41.36	41.10	41.09	40.39	39.14	38.55	38.14
A. Enteric fermentation									
B. Manure management	14.26	14.26	14.36	14.31	14.08	13.78	13.55	13.39	13.31
C. Rice cultivation									
D. Agricultural soils	27.49	27.49	26.88	26.66	26.89	26.49	25.47	25.05	24.72
E. Prescribed burning of savannas	NO	NO	NO	NO	NO	NO	NO	NO	NO
F. Field burning of agricultural residues	0.13	0.13	0.12	0.12	0.11	0.12	0.11	0.11	0.11
G. Liming									
H. Urea application									
I. Other carbon containing fertilizers									
J. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO
<b>4. Land use, land-use change and forestry</b>	1.13	1.13	1.11	1.10	1.10	1.08	1.05	1.03	1.00
A. Forest land	0.44	0.44	0.44	0.44	0.45	0.44	0.44	0.45	0.45
B. Cropland	0.43	0.43	0.41	0.40	0.39	0.39	0.37	0.34	0.32
C. Grassland	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
D. Wetlands	NO, NA, NE, IE	NO, NA, NE, IE	NO, NA, NE, IE	NO, NA, NE, IE	NO, NA, NE, IE	NO, NA, NE, IE	NO, NA, NE, IE	NO, NA, NE, IE	NO, NA, NE, IE
E. Settlements	NO, NA, IE	NO, NA, IE	NO, NA, IE	NO, NA, IE	NO, NA, IE	NO, NA, IE	NO, NA, IE	NO, NA, IE	NO, NA, IE
F. Other land	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
G. Harvested wood products									
H. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>5. Waste</b>	9.33	9.33	9.54	9.96	10.05	10.54	11.07	11.47	11.75
A. Solid waste disposal									
B. Biological treatment of solid waste	0.47	0.47	0.46	0.46	0.46	0.46	0.46	0.46	0.46
C. Incineration and open burning of waste	4.82	4.82	4.95	5.40	5.40	5.93	6.39	6.80	7.04
D. Waste water treatment and discharge	4.05	4.05	4.13	4.10	4.18	4.15	4.21	4.21	4.25
E. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>6. Other (as specified in the summary table in CRF)</b>	NO	NO	NO	NO	NO	NO	NO	NO	NO
<b>Total direct N<sub>2</sub>O emissions without N<sub>2</sub>O from LULUCF</b>	107.06	107.06	106.00	106.44	106.06	110.46	111.50	115.28	117.94
<b>Total direct N<sub>2</sub>O emissions with N<sub>2</sub>O from LULUCF</b>	108.19	108.19	107.11	107.54	107.16	111.54	112.55	116.31	118.95
<b>Memo items:</b>									
<b>International bunkers</b>	0.85	0.85	0.90	0.91	0.97	1.00	1.06	0.86	0.99
Aviation	0.37	0.37	0.39	0.40	0.39	0.43	0.48	0.52	0.54
Navigation	0.48	0.48	0.51	0.51	0.57	0.57	0.58	0.34	0.44
<b>Multilateral operations</b>	NO	NO	NO	NO	NO	NO	NO	NO	NO
<b>CO<sub>2</sub> emissions from biomass</b>									
<b>CO<sub>2</sub> captured</b>									
<b>Long-term storage of C in waste disposal sites</b>									
<b>Indirect N<sub>2</sub>O</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Indirect CO<sub>2</sub> (3)</b>									

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

**Emission trends (N<sub>2</sub>O)**  
**(Sheet 2 of 3)**

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
<b>1. Energy</b>										
A. Fuel combustion (sectoral approach)	28.19	28.66	28.77	28.79	27.89	26.94	26.12	26.08	25.33	25.21
1. Energy industries	6.31	6.64	6.90	7.53	7.38	7.45	7.45	8.19	8.14	8.35
2. Manufacturing industries and construction	6.32	6.47	6.66	6.64	6.75	6.67	6.75	6.71	6.66	6.81
3. Transport	14.58	14.51	14.16	13.58	12.70	11.81	10.83	10.03	9.43	8.99
4. Other sectors	0.98	1.04	1.06	1.04	1.06	1.01	1.08	1.14	1.10	1.05
5. Other	NO									
B. Fugitive emissions from fuels	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1. Solid fuels	NO, NE									
2. Oil and natural gas and other emissions from energy production	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C. CO <sub>2</sub> transport and storage										
<b>2. Industrial processes</b>	34.99	14.16	22.55	11.27	10.81	10.97	12.08	10.38	11.20	8.60
A. Mineral industry										
B. Chemical industry	33.66	12.86	21.30	10.02	9.55	9.69	10.86	9.15	9.88	7.48
C. Metal industry	NO									
D. Non-energy products from fuels and solvent use	NO									
E. Electronic industry										
F. Product uses as ODS substitutes										
G. Other product manufacture and use	1.33	1.29	1.25	1.25	1.26	1.27	1.22	1.23	1.33	1.13
H. Other	NO									
<b>3. Agriculture</b>	37.78	37.59	37.85	37.41	37.59	37.72	37.49	37.67	38.01	39.45
A. Enteric fermentation										
B. Manure management	13.16	13.06	13.21	13.39	13.67	13.93	14.05	14.36	14.84	15.18
C. Rice cultivation										
D. Agricultural soils	24.51	24.43	24.54	23.92	23.83	23.70	23.35	23.22	23.09	24.19
E. Prescribed burning of savannas	NO									
F. Field burning of agricultural residues	0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.09	0.09	0.08
G. Liming										
H. Urea application										
I. Other carbon containing fertilizers										
J. Other	NO									
<b>4. Land use, land-use change and forestry</b>	0.98	0.96	0.94	0.93	0.92	0.88	0.86	0.84	0.81	0.78
A. Forest land	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
B. Cropland	0.31	0.29	0.28	0.27	0.26	0.23	0.21	0.19	0.17	0.15
C. Grassland	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
D. Wetlands	NO, NA, NE, IE									
E. Settlements	NO, NA, IE									
F. Other land	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03
G. Harvested wood products										
H. Other	NA									
<b>5. Waste</b>	11.73	11.87	11.71	11.57	11.12	11.22	11.23	11.48	11.13	10.53
A. Solid waste disposal										
B. Biological treatment of solid waste	0.46	0.46	0.47	0.47	0.59	0.70	0.72	0.81	0.84	0.81
C. Incineration and open burning of waste	7.06	7.29	7.23	7.00	6.41	6.40	6.37	6.59	6.19	5.68
D. Waste water treatment and discharge	4.21	4.11	4.01	4.10	4.11	4.12	4.13	4.08	4.11	4.04
E. Other	NA									
<b>6. Other (as specified in the summary table in CRF)</b>	NO									
<b>Total direct N<sub>2</sub>O emissions without N<sub>2</sub>O from LULUCF</b>	112.69	92.27	100.88	89.03	87.42	86.85	86.91	85.61	85.68	83.80
<b>Total direct N<sub>2</sub>O emissions with N<sub>2</sub>O from LULUCF</b>	113.67	93.23	101.82	89.96	88.33	87.74	87.77	86.44	86.49	84.58
<b>Memo items:</b>										
<b>International bunkers</b>	1.04	1.00	1.02	0.93	1.02	1.04	1.09	1.15	1.08	1.03
Aviation	0.57	0.55	0.55	0.53	0.60	0.58	0.60	0.60	0.57	0.52
Navigation	0.47	0.45	0.47	0.40	0.42	0.47	0.49	0.55	0.52	0.51
<b>Multilateral operations</b>	NO									
<b>CO<sub>2</sub> emissions from biomass</b>										
<b>CO<sub>2</sub> captured</b>										
<b>Long-term storage of C in waste disposal sites</b>										
<b>Indirect N<sub>2</sub>O</b>	NA									
<b>Indirect CO<sub>2</sub> (3)</b>										

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

**Emission trends (N<sub>2</sub>O)**

(Sheet 3 of 3)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2008	2009	2010	2011	2012	2013	Change from base to latest reported year
	%						
<b>1. Energy</b>							
A. Fuel combustion (sectoral approach)	24.21	23.05	22.91	22.61	22.42	22.52	-0.29
1. Energy industries	8.19	7.91	7.97	8.59	8.64	8.83	119.81
2. Manufacturing industries and construction	6.55	6.15	6.25	6.06	6.14	6.22	35.16
3. Transport	8.49	7.96	7.45	7.08	6.84	6.62	-50.03
4. Other sectors	0.98	1.03	1.25	0.88	0.80	0.85	19.04
5. Other	NO	NO	NO	NO	NO	NO	
B. Fugitive emissions from fuels	0.00	0.00	0.00	0.00	0.00	0.00	-16.32
1. Solid fuels	NO, NE						
2. Oil and natural gas and other emissions from energy production	0.00	0.00	0.00	0.00	0.00	0.00	-16.32
C. CO <sub>2</sub> transport and storage							
<b>2. Industrial processes</b>	8.88	9.32	7.62	6.48	5.80	5.87	-82.36
A. Mineral industry							
B. Chemical industry	7.89	8.45	6.70	5.57	4.76	4.66	-85.56
C. Metal industry	NO	NO	NO	NO	NO	NO	
D. Non-energy products from fuels and solvent use	NO	NO	NO	NO	NO	NO	
E. Electronic industry							
F. Product uses as ODS substitutes							
G. Other product manufacture and use	1.00	0.87	0.92	0.91	1.03	1.20	23.44
H. Other	NO	NO	NO	NO	NO	NO	
<b>3. Agriculture</b>	37.33	36.77	37.84	37.62	37.36	37.05	-11.53
A. Enteric fermentation							
B. Manure management	15.52	15.80	15.60	15.62	15.43	15.25	6.93
C. Rice cultivation							
D. Agricultural soils	21.73	20.89	22.16	21.92	21.86	21.73	-20.95
E. Prescribed burning of savannas	NO	NO	NO	NO	NO	NO	
F. Field burning of agricultural residues	0.08	0.08	0.08	0.07	0.07	0.07	-44.56
G. Liming							
H. Urea application							
I. Other carbon containing fertilizers							
J. Other	NO	NO	NO	NO	NO	NO	
<b>4. Land use, land-use change and forestry</b>	0.77	0.74	0.72	0.71	0.70	0.70	-37.78
A. Forest land	0.45	0.44	0.44	0.44	0.44	0.44	0.69
B. Cropland	0.13	0.12	0.10	0.10	0.09	0.09	-79.49
C. Grassland	0.04	0.03	0.03	0.03	0.03	0.03	-5.98
D. Wetlands	NO, NA, NE, IE						
E. Settlements	NO, NA, IE						
F. Other land	0.02	0.02	0.02	0.02	0.02	0.02	-57.14
G. Harvested wood products							
H. Other	NA	NA	NA	NA	NA	NA	
<b>5. Waste</b>	10.42	10.16	9.82	9.90	9.88	9.92	6.31
A. Solid waste disposal							
B. Biological treatment of solid waste	0.91	0.90	0.79	0.87	0.86	0.86	84.85
C. Incineration and open burning of waste	5.47	5.27	5.09	5.12	5.24	5.26	9.22
D. Waste water treatment and discharge	4.04	3.99	3.94	3.91	3.78	3.80	-6.20
E. Other	NA	NA	NA	NA	NA	NA	
<b>6. Other (as specified in the summary table in CRF)</b>	NO	NO	NO	NO	NO	NO	
<b>Total direct N<sub>2</sub>O emissions without N<sub>2</sub>O from LULUCF</b>	80.84	79.30	78.19	76.60	75.45	75.36	-29.61
<b>Total direct N<sub>2</sub>O emissions with N<sub>2</sub>O from LULUCF</b>	81.61	80.04	78.91	77.32	76.16	76.07	-29.69
<b>Memo items:</b>							
<b>International bunkers</b>	0.97	0.85	0.87	0.88	0.90	0.89	4.17
Aviation	0.50	0.44	0.46	0.52	0.54	0.54	43.80
Navigation	0.47	0.42	0.41	0.36	0.36	0.35	-26.63
<b>Multilateral operations</b>	NO	NO	NO	NO	NO	NO	
<b>CO<sub>2</sub> emissions from biomass</b>							
<b>CO<sub>2</sub> captured</b>							
<b>Long-term storage of C in waste disposal sites</b>							
<b>Indirect N<sub>2</sub>O</b>	NA	NA	NA	NA	NA	NA	
<b>Indirect CO<sub>2</sub> (3)</b>							

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

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

Custom Footnotes

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

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GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year <sup>a</sup>	1990	1991	1992	1993	1994	1995	1996	1997
	kt								
<b>Emissions of HFCs and PFCs - (kt CO<sub>2</sub> equivalent)</b>	22,471.61	22,471.61	24,856.54	25,384.52	29,071.68	34,494.85	42,822.25	42,855.01	44,419.65
<b>Emissions of HFCs - (kt CO<sub>2</sub> equivalent)</b>	15,932.31	15,932.31	17,349.61	17,767.22	18,128.88	21,051.39	25,212.33	24,596.83	24,435.37
HFC-23	1.08	1.08	1.17	1.19	1.13	1.24	1.45	1.33	1.26
HFC-32	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO
HFC-41	NO	NO	NO	NO	NO	NO	NO	NO	NO
HFC-43-10mee	IE, NE, NO	IE, NE, NO	IE, NE, NO	IE, NE, NO	IE, NE, NO	IE, NE, NO	IE, NE, NO	IE, NE, NO	IE, NE, NO
HFC-125	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO
HFC-134	NO	NO	NO	NO	NO	NO	NO	NO	NO
HFC-134a	0.00	0.00	IE, NO	0.08	0.63	1.30	2.01	2.79	3.49
HFC-143	NO	NO	NO	NO	NO	NO	NO	NO	NO
HFC-143a	NO	NO	NO	NO	NO	NO	NO	NO	NO
HFC-152									
HFC-152a	0.00	0.00	NO	0.00	0.01	0.01	0.01	0.01	0.00
HFC-161									
HFC-227ea	NO	NO	NO	NO	NO	NO	NO	0.00	0.00
HFC-236cb									
HFC-236ea									
HFC-236fa	NO	NO	NO	NO	NO	NO	NO	NO	NO
HFC-245ca	NO	NO	NO	NO	NO	NO	NO	NO	NO
HFC-245fa	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO
HFC-365mfc	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO
Unspecified mix of HFCs(4) - (kt CO <sub>2</sub> equivalent)	2.24	2.24	IE, NO	67.54	440.93	768.60	876.60	877.75	854.74
<b>Emissions of PFCs - (kt CO<sub>2</sub> equivalent)</b>	6,539.30	6,539.30	7,506.92	7,617.29	10,942.80	13,443.46	17,609.92	18,258.18	19,984.28
CF <sub>4</sub>	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01
C <sub>2</sub> F <sub>6</sub>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C <sub>3</sub> F <sub>8</sub>	NO	NO	NO	NO	NO	NO	NO	NO	NO
C <sub>4</sub> F <sub>10</sub>	NO	NO	NO	NO	NO	NO	NO	NO	NO
c-C <sub>4</sub> F <sub>8</sub>	NO	NO	NO	NO	NO	NO	NO	NO	NO
C <sub>5</sub> F <sub>12</sub>	NO	NO	NO	NO	NO	NO	NO	NO	NO
C <sub>6</sub> F <sub>14</sub>	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
C10F18	NO	NO	NO	NO	NO	NO	NO	NO	NO
c-C3F6	NO	NO	NO	NO	NO	NO	NO	NO	NO
Unspecified mix of PFCs(4) - (kt CO <sub>2</sub> equivalent)	6,335.64	6,335.64	7,336.00	7,502.73	10,837.28	13,338.18	17,506.37	18,160.35	19,896.03
Unspecified mix of HFCs and PFCs - (kt CO <sub>2</sub> equivalent)									
<b>Emissions of SF<sub>6</sub> - (kt CO<sub>2</sub> equivalent)</b>	12,850.07	12,850.07	14,206.04	15,635.82	15,701.97	15,019.96	16,447.52	17,022.19	14,510.54
SF <sub>6</sub>	0.56	0.56	0.62	0.69	0.69	0.66	0.72	0.75	0.64
<b>Emissions of NF<sub>3</sub> - (kt CO<sub>2</sub> equivalent)</b>	32.89	32.89	32.89	32.89	43.85	76.74	202.81	194.27	172.78
NF <sub>3</sub>	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01

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

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

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<i>GREENHOUSE GAS SOURCE AND SINK CATEGORIES</i>	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
<b>Emissions of HFCs and PFCs - (kt CO<sub>2</sub> equivalent)</b>	40,308.94	37,483.60	34,719.72	29,330.29	25,417.45	25,054.96	21,595.94	21,347.59	23,546.79	24,519.84
<b>Emissions of HFCs - (kt CO<sub>2</sub> equivalent)</b>	23,740.46	24,365.53	22,846.61	19,451.82	16,218.01	16,200.76	12,379.29	12,724.24	14,548.01	16,602.99
HFC-23	1.18	1.21	1.06	0.80	0.52	0.43	0.09	0.04	0.06	0.02
HFC-32	0.00	0.01	0.02	0.05	0.08	0.14	0.21	0.30	0.39	0.49
HFC-41	NO									
HFC-43-10mee	IE, NE, NO									
HFC-125	0.00	0.01	0.02	0.05	0.08	0.14	0.21	0.30	0.39	0.49
HFC-134	NO									
HFC-134a	3.87	4.05	4.31	4.38	4.61	4.75	4.31	3.59	2.90	2.84
HFC-143	NO									
HFC-143a	NO									
HFC-152										
HFC-152a	NO	NO	0.02	0.08	0.16	0.40	0.84	1.22	1.41	1.44
HFC-161										
HFC-227ea	0.00	0.00	0.00	0.01	0.01	0.02	0.04	0.05	0.04	0.04
HFC-236cb										
HFC-236ea										
HFC-236fa	NO									
HFC-245ca	NO									
HFC-245fa	IE, NO	0.19	0.48	0.67	0.85					
HFC-365mfc	IE, NO	0.00	0.08	0.17	0.25	0.31				
Unspecified mix of HFCs(4) - (kt CO <sub>2</sub> equivalent)	763.92	705.37	899.09	1,141.08	1,510.75	2,356.16	3,542.91	4,826.92	6,722.74	8,786.08
<b>Emissions of PFCs - (kt CO<sub>2</sub> equivalent)</b>	16,568.48	13,118.06	11,873.11	9,878.47	9,199.44	8,854.21	9,216.64	8,623.35	8,998.78	7,916.85
CF <sub>4</sub>	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C <sub>2</sub> F <sub>6</sub>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C <sub>3</sub> F <sub>8</sub>	NO									
C <sub>4</sub> F <sub>10</sub>	NO									
c-C <sub>4</sub> F <sub>8</sub>	NO									
C <sub>5</sub> F <sub>12</sub>	NO									
C <sub>6</sub> F <sub>14</sub>	NA, NO	NA, NO	NA, NO	NA, NO	0.00	0.00	0.00	0.00	0.00	0.00
C10F18	NO									
c-C3F6	NO									
Unspecified mix of PFCs(4) - (kt CO <sub>2</sub> equivalent)	16,495.12	13,074.82	11,846.70	9,855.58	9,177.57	8,831.96	9,194.74	8,601.30	8,976.33	7,893.84
Unspecified mix of HFCs and PFCs - (kt CO <sub>2</sub> equivalent)										
<b>Emissions of SF<sub>6</sub> - (kt CO<sub>2</sub> equivalent)</b>	13,224.10	9,176.62	7,031.36	6,066.02	5,735.48	5,406.31	5,258.70	5,063.86	5,243.91	4,754.51
SF <sub>6</sub>	0.58	0.40	0.31	0.27	0.25	0.24	0.23	0.22	0.23	0.21
<b>Emissions of NF<sub>3</sub> - (kt CO<sub>2</sub> equivalent)</b>	172.65	282.59	186.01	195.05	271.72	299.14	367.36	1,249.87	1,093.43	1,210.12
NF <sub>3</sub>	0.01	0.02	0.01	0.01	0.02	0.02	0.02	0.07	0.06	0.07

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

Emission trends (HFCs, PFCs and SF<sub>6</sub>)

(Sheet 3 of 3)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2008	2009	2010	2011	2012	2013	Change from base to latest reported year
	%						
<b>Emissions of HFCs and PFCs - (kt CO<sub>2</sub> equivalent)</b>	24,896.05	24,826.39	27,363.56	29,602.65	32,523.91	35,056.69	56.00
<b>Emissions of HFCs - (kt CO<sub>2</sub> equivalent)</b>	19,152.64	20,779.51	23,114.01	25,847.20	29,087.58	31,776.63	99.45
HFC-23	0.04	0.00	0.00	0.00	0.00	0.00	-99.85
HFC-32	0.61	0.72	0.84	1.01	1.20	1.47	
HFC-41	NO	NO	NO	NO	NO	NO	
HFC-43-10mee	IE, NE, NO						
HFC-125	0.61	0.72	0.84	1.01	1.20	1.42	
HFC-134	NO	NO	NO	NO	NO	NO	
HFC-134a	2.84	2.82	2.77	2.63	2.61	2.46	262,794.83
HFC-143	NO	NO	NO	NO	NO	NO	
HFC-143a	NO	NO	NO	NO	NO	NO	
HFC-152							
HFC-152a	1.68	1.58	1.30	1.26	0.99	0.68	1,797,042.86
HFC-161							
HFC-227ea	0.05	0.04	0.03	0.03	0.03	0.03	
HFC-236cb							
HFC-236ea							
HFC-236fa	NO	NO	NO	NO	NO	NO	
HFC-245ca	NO	NO	NO	NO	NO	NO	
HFC-245fa	0.93	1.01	1.11	1.24	1.36	1.47	
HFC-365mfc	0.35	0.41	0.46	0.51	0.59	0.65	
Unspecified mix of HFCs(4) - (kt CO <sub>2</sub> equivalent)	10,353.97	11,995.32	13,794.72	15,890.35	18,209.99	20,057.77	894,170.99
<b>Emissions of PFCs - (kt CO<sub>2</sub> equivalent)</b>	5,743.40	4,046.87	4,249.54	3,755.45	3,436.33	3,280.06	-49.84
CF <sub>4</sub>	0.00	0.00	0.00	0.00	0.00	0.00	-95.29
C <sub>2</sub> F <sub>6</sub>	0.00	0.00	0.00	0.00	0.00	0.00	-95.29
C <sub>3</sub> F <sub>8</sub>	NO	NO	NO	NO	NO	NO	
C <sub>4</sub> F <sub>10</sub>	NO	NO	NO	NO	NO	NO	
c-C <sub>4</sub> F <sub>8</sub>	NO	NO	NO	NO	NO	NO	
C <sub>5</sub> F <sub>12</sub>	NO	NO	NO	NO	NO	NO	
C <sub>6</sub> F <sub>14</sub>	0.00	0.00	0.00	0.00	NA, NO	0.00	
C10F18	NO	NO	NO	NO	NO	NO	
c-C3F6	NO	NO	NO	NO	NO	NO	
Unspecified mix of PFCs(4) - (kt CO <sub>2</sub> equivalent)	5,719.50	4,027.52	4,229.93	3,734.27	3,423.06	3,260.11	-48.54
Unspecified mix of HFCs and PFCs - (kt CO <sub>2</sub> equivalent)							
<b>Emissions of SF<sub>6</sub> - (kt CO<sub>2</sub> equivalent)</b>	4,206.12	2,474.65	2,468.45	2,299.56	2,299.32	2,165.76	-83.15
SF <sub>6</sub>	0.18	0.11	0.11	0.10	0.10	0.09	-83.15
<b>Emissions of NF<sub>3</sub> - (kt CO<sub>2</sub> equivalent)</b>	1,173.16	1,166.68	1,369.46	1,561.30	1,255.57	1,360.96	4,038.06
NF <sub>3</sub>	0.07	0.07	0.08	0.09	0.07	0.08	4,038.06

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

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

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

<sup>d</sup>In accordance with the "Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual inventories", HFC and PFC emissions should be reported for each relevant chemical. However, if it is not possible to report values for each chemical (i.e. mixtures, confidential data, lack of disaggregation), this row could be used for reporting aggregate figures for HFCs and PFCs, respectively. Note that the unit used for this row is kt of CO<sub>2</sub> equivalent and that appropriate notation keys should be entered in the cells for the individual chemicals.)

## Custom Footnotes

Documentation Box:

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Table 2(a)

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

<i>Party</i>	<i>Japan</i>	
Base year /base period	FY2005	
Emission reduction target	% of base year/base period	% of 1990 <sup>b</sup>
	3.80	
Period for reaching target	BY-2020	

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

<sup>b</sup> Optional.

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

<i>Gases covered</i>		<i>Base year for each gas (year):</i>
CO <sub>2</sub>		FY2005
CH <sub>4</sub>		FY2005
N <sub>2</sub> O		FY2005
HFCs		CY2005
PFCs		CY2005
SF <sub>6</sub>		CY2005
NF <sub>3</sub>		CY2005
Other Gases (specify)		
Sectors covered <sup>b</sup>	Energy	Yes
	Transport <sup>f</sup>	Yes
	Industrial processes <sup>g</sup>	Yes
	Agriculture	Yes
	LULUCF	Yes
	Waste	Yes
	Other Sectors (specify)	

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

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

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

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

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

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

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

*Abbreviations* : GWP = global warming potential

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

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

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

<b>Role of LULUCF</b>	LULUCF in base year level and target	Included
	Contribution of LULUCF is calculated using	Activity-based approach

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

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

**Description of quantified economy-wide emission reduction target: market-based mechanisms under the Convention<sup>a</sup>**

<i>Market-based mechanisms under the Convention</i>	<i>Possible scale of contributions (estimated kt CO<sub>2</sub> eq)</i>
CERs	NE
ERUs	NE
AAUs <sup>i</sup>	NE
Carry-over units <sup>j</sup>	NE
Other mechanism units under the Convention (specify) <sup>d</sup>	

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

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

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

<sup>i</sup> AAUs issued to or purchased by a Party.

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

**Description of quantified economy-wide emission reduction target: other market-based mechanisms<sup>a</sup>**

<i>Other market-based mechanisms</i>	<i>Possible scale of contributions</i>
<i>(Specify)</i>	<i>(estimated kt CO<sub>2</sub> eq)</i>
JCM	NE

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

**Description of quantified economy-wide emission reduction target: any other information<sup>a,b</sup>**

This is a target at this point, which has not yet taken into account the emission reduction effect resulting from nuclear power. A firm target, based on the energy policy situation and so on, will eventually be set.

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

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

***Custom Footnotes***

Table 3

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

Name of mitigation action <sup>a</sup>	Sector(s) affected <sup>b</sup>	GHG(s) affected	Objective and/or activity affected	Type of instrument <sup>c</sup>	Status of implementation <sup>d</sup>	Brief description <sup>e</sup>	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO <sub>2</sub> eq)	
Promotion of Global Warming Countermeasures Based on the Action Plan of Each Local Government*	Cross-cutting	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O, HFCs, PFCs, SF <sub>6</sub> , NF <sub>3</sub>	Support development of low-carbon communities which is coordinated with local city plans and led by local governments	Other (Law/Standard, Budget/Subsidy, Awareness Raising)	Implemented	Local governments will formulate and implement the local action plans based on the Act on Promotion of Global Warming Countermeasures (come in effect since 1998) which are expected to be coordinated with local city plans. The Government will provide guidelines for developing plans as well as support implementing actions based on their plans.	2008	MOE		
Promotion of Developing Low-Carbon Community*	Cross-cutting	CO <sub>2</sub>	Encourage low-carbonization of communities through concentrating city functions and low-carbonization of transport systems	Other (Law/Standard, Taxation, Budget/Subsidy)	Implemented	The Government will facilitate the formulation of low carbon city plans led by the local government based on "Low Carbon City Act (come in effect since December 2010)" as well as facilitate actions to integrate various urban functions, to promote the use of public transportation, to enhance efficiency of energy use, to preserve urban green areas, and to promote urban greening, based on the plans.	2012	MLIT, METI, MOE		
Holistic and Efficient Use of Energy*	Energy	CO <sub>2</sub>	Support the installation of, and promote the diffusion and extended usage of, innovative and cutting-edge system which utilizes area-wide energy use at block and district.	Other (Budget/Subsidy, Awareness Raising)	Implemented	The Government will provide support to develop facilities which contribute to area-wide energy use with utilization possibility, innovativeness and leadership in multiple districts on the project areas.	2008	MLIT, METI		
Promotion and Reinforcement of Voluntary Action Plans of Industry*	Energy, Industry/industrial processes	CO <sub>2</sub>	Reduce CO <sub>2</sub> emissions from the industry, commercial, transport, and energy conversion sector by promoting voluntary and active activities of business operators to actively implement environmentally-friendly business actions on a voluntary basis with respect to the environment conservation.	Voluntary Agreement	Implemented	In industry sector, each industry group formulates and implements GHG emissions reduction plan (the Commitment to a Low Carbon Society) including 2020 emissions reduction target with an assumption of maximum use of world most-advanced low-carbon technologies (best available technologies, BAT). And the government will strictly assess and verify such initiatives.	Since 1997 (Depends on a group)	METI, MOE, Industry Group, Related Ministries and Agencies (for Assessment and Verification)		NE
Promotion of Introduction of Highly Energy-efficient Equipment and Devices*	Energy	CO <sub>2</sub>	Reduce CO <sub>2</sub> emissions from energy consumption in the manufacturing sector and the like by promoting the diffusion of energy-saving equipment in the sector.	Other (Budget/Subsidy, Financing)	Implemented	On the top of the introduction of various energy-efficient equipment and devices based on the Commitment to a Low Carbon Society, the Government will implement supporting programs to promote the diffusion of low-carbon industrial furnaces which lead to massive improvement of energy efficiency compared to conventional equipment and devices.	2008	METI		NE

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Promotion of Introduction of Highly Energy-efficient Equipment and Devices*	Energy	CO <sub>2</sub>	Reduce CO2 emissions from energy consumption by construction work by promoting the diffusion of low-fuel or low-carbon construction machinery.	Other (Budget/Subsidy, Financing, Other)	Implemented	The Government will certify, and support the introduction of, construction machinery which passes the given criteria of fuel efficiency and the machinery using leading technologies such as hybrid or electrically geared system.	2010	MLIT		NE
Promotion of Introduction of Highly Energy-efficient Equipment and Devices*	Energy	CO <sub>2</sub>	Reduce CO2 emissions associated with energy consumption in agriculture and fishery sector by diffusing energy saving facilities/devices in greenhouse horticulture, appliances for agriculture, and fishing vessels.	Other (Budget/Subsidy, Awareness Raising, Technology Development)	Implemented	The Government will support the introduction of, and develop further technologies of, heat pump units to greenhouse horticulture, appliances for agriculture such as heating equipment using woody biomass, high-speed pudding machines, energy-efficient outboard motors for fishing vessels, and fish-luring lights using LED etc.	2007	MAFF		NE
Improving the Energy Efficiency of Equipment and Devices based on the Top Runner Program*	Energy	CO <sub>2</sub>	Improve energy consumption when devices are used, through the continuous improvements in device quality by the Top Runner system. (Devices currently subject to the program: air conditioners, electronic refrigerators, electronic freezers, energy converters, multi-functional printers and electric water heaters)	Other (Law/Standard, Budget/Subsidy)	Implemented	The Government will continue to reconsider about target devices for the Top Runner Programme that requires manufacturers and importers of products to meet criteria which is in line with standards for currently most-advanced devices and assumed technological advances in about 3 to 10 years. At the same time, consideration will be carried out in order to revise the standards on devices which reaches their target year.	1998	METI		NE

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Improvement of the Energy Efficiency Performance and Low-Carbonization of Buildings*	Energy	CO <sub>2</sub>	Reduce CO <sub>2</sub> emissions from energy consumption in buildings by promoting their energy saving through "regulations," "assessment and display" and "providing incentives."	Other (Law/Standard, Budget/Subsidy, Other)	Implemented	Regarding newly constructed buildings, the Government will implement support to raise public awareness to encourage diffusion of the revised energy conservation standard. The Government will make it mandatory in stages to comply with energy conservation standards for newly constructed buildings by 2020. To promote further improvement of energy efficiency, the Government will promote diffusion of low carbon buildings with a higher energy-efficiency, and provide support for implementing pilot projects which can realize low CO <sub>2</sub> emissions. The Top-Runner Program will be introduced on construction materials and thermal insulation material, sash window, and sealed insulating glass are covered. And regarding existing buildings, the Government will pursue retrofits to improve energy efficiency, improvement of the use of equipment and devices, provision of consultation on potential capacity of GHG emissions reduction, promoted use of data of energy consumption and so on in order to improve the energy efficiency of the entire building stocks. Also the Government will discuss multilateral measures which are expected to be in need in the future specifically for replacing equipment with high-performed one. The Government will encourage the enhancement and diffusion of objective and clarified system for verifying and labelling of comprehensive environmental performances.	2003 (When the reporting period of energy-saving performance started, based on the Energy Saving Law)	MLIT, METI, MOE		NE
Smart Consumption of Energy by Using Energy Management etc.*	Energy	CO <sub>2</sub>	Support the introduction of Energy Management Systems such as BEMS, HEMS and MEMS in order to promote wider diffusion of those systems.	Other (Taxation, Budget/Subsidy, Other)	Implemented	The Government will promote the introduction of smart-meter as infrastructure and install them in all households and offices in the early 2020s. At the same time, the Government will promote the introduction of Energy Management Systems (HEMS, BEMS, etc.) and the utilization of energy consumption data with the aim of optimizing energy consumption. Efficient energy management system will be introduced such as 'demand response', which adjusts energy demand in response to the energy supply condition. Also, the Government will support the introduction of technologies etc. for CO <sub>2</sub> emissions reduction when developing social system such as water supply, sewage system, waste management and ICT.	1998(Energy Use Rationalization Business support Program), 2012 (Subsidy to promote innovative energy conservation technology implementation in housing and buildings)	METI, MOE, MIC, Related Ministries and Agencies		NE

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Initiatives by Public Organizations*	Energy	CO <sub>2</sub>	Implement necessary actions to achieve targets based on the commitment plans of each ministry and agency in accordance with the national commitment plan. In order to spur demands for products that contribute to greenhouse gas emissions reduction and other eco-friendly goods and services, the Government and independent administrative agencies etc. will promote the conversion of demand and they will make environmentally-conscious contracts which will contribute to GHG emissions reduction.	Other (Law/Standard)	Implemented	The Government will reduce greenhouse gas emissions with regard to its own administration and undertakings at a level which is equivalent or superior to initiatives in the current national commitment plan, even during the period before the new national commitment plan is formulated in line with the new plan for global warming prevention. The Government and independent administrative agencies etc. will take the initiative in procuring such goods and services that contribute to GHG emissions reduction as well as will make environmentally-conscious contracts which will contribute to GHG emissions reduction, mainly in six areas (namely supply of electricity, automobiles, vessels, ESCO, buildings, and industrial waste).	2001	All Ministries and Agencies		NE
Improving the Energy Efficiency of Equipment and Devices based on the Top Runner Program [reprinted]*	Energy	CO <sub>2</sub>	Improve energy consumption when devices are used, through the continuous improvements in device quality by the Top Runner standard. (Devices currently subject to the program: industrial air conditioners, industrial electronic refrigerators, industrial electronic freezers, energy converters, multi-functional printers and electric water heaters)	Other (Law/Standard, Budget/Subsidy)	Implemented	The Government will continue to reconsider about target devices for the Top Runner Programme that requires manufacturers and importers of products to meet criteria which is in line with standards for currently most-advanced devices and assumed technological advances in about 3 to 10 years. (LED light bulbs and other devices are already added on the list in 2013.) At the same time, consideration will be carried out in order to revise the standards on devices which reaches their target year.	1998	METI		NE

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Improvement of the Energy Efficiency Performance and Low-Carbonization of Housing*	Energy	CO <sub>2</sub>	Reduce CO <sub>2</sub> emissions from energy consumption in houses by promoting energy saving in housing through "regulations," "assessment and display" and "providing incentives."	Other ("Law/Standard, Taxation, Budget/Subsidy, Financing, Technology Development, Awareness Raising, Other)	Implemented	Regarding newly constructed houses, the Government will implement support to raise public awareness to encourage diffusion of the revised energy saving standard. The Government will make it mandatory in stages to comply with energy conservation standards for newly constructed houses by 2020. In order to develop an enabling environment for such measures, the Government will support the improvement of the energy-saving design and construction techniques of small- and medium-sized builders and carpenters who are the main player for house supply, as well as the arrangement of evaluation system of energy saving performance. To promote diffusion of low carbon houses with a higher energy-efficiency, and for implementing pilot projects which will lead to low CO <sub>2</sub> emissions. The Top-runner Program will be introduced on construction materials by the end of this fiscal year. And regarding existing houses, the Government will pursue retrofits to improve energy efficiency, improvement of the use of equipment and devices, provision of consultation on potential capacity of GHG emissions reduction, promoted use of data of energy consumption and so on in order to improve the energy efficiency of the entire house stocks. Also the Government will discuss multilateral measures which are expected to be in need in the future specifically for replacing equipment with high-performed one. The Government will encourage the enhancement and diffusion of objective and	2003 (When the reporting period of energy-saving performance started, based on the Energy Saving Law)	MLIT, METI, MOE		NE
Promotion of Combined Heat and Power and Household Fuel Cells*	Energy	CO <sub>2</sub>	Reduce CO <sub>2</sub> emissions from energy consumption in houses by promoting the introduction of combined heat and power such as fuel cells for household use.	Other (Budget/Subsidy, Technology Development)	Implemented	The Government will promote the diffusion of combined heat and power such as household fuel cells ("Ene-farm"), which allow energy to be used more efficiently by utilizing heat generated during electricity generation for purposes like heating water.	2009	METI		NE

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Other Supportive Measures*	Energy	CO <sub>2</sub>	Promote innovative changes towards low-carbon lifestyle by providing information, "visualization" of CO <sub>2</sub> emissions as well as promoting low-carbon activities.	Other (Budget)	Implemented	The Government will work on the "visualization" of CO <sub>2</sub> emissions by various product type by displaying information on emissions and other items during the product's life cycle. Moreover, the Government will work to promote innovative changes towards low-carbon lifestyle through the introduction of Home Energy Management Systems (HEMS), which operates lighting, air conditioners and other devices to optimally adjust to interior conditions, promotion of the use of HEMS data, and promotion of "Home CO <sub>2</sub> advisor service".	2010	MOE, METI		NE
Improvement in the Fuel Efficiency of Vehicles and Diffusion of Them (Measures for each vehicle as a unit)*	Transport	CO <sub>2</sub>	Reduce CO <sub>2</sub> emissions from energy consumption in the transport sector by supporting the introduction of highly energy-efficient next-generation automobiles (hybrid vehicles (HEV), plug-in hybrid vehicles (PHEV), fuel-cell vehicles (FCV), clean diesel vehicles (CDV) and promoting the extensive diffusion of those automobiles, while continuing to improve the performance of vehicles according to fuel efficiency standards.	Other (Law/Standard, Taxation, Budget/Subsidy, Technology Development)	Implemented	For next-generation vehicles such as electric vehicles, the Government will promote the development of recharging infrastructure, support the purchase of vehicles to create mass production effects and to promote price reduction, and also support research and development to extend a cruising range and reduce the production costs. Taking into consideration that, in December 2014, fuel cell vehicles entered the market, the Government will systematically put in place hydrogen stations and utilize hydrogen from renewable energy sources with a view to diffuse fuel cell vehicles. The Government will reform regulation and develop technologies. By doing the above, the Government will promote the diffusion of next generation vehicles and promote its implementation. And the Government will promote further improvement of performance of automobiles through fuel efficiency standards (as the "Top Runner Standard") and take preferential tax treatment measures targeted at gasoline-based vehicles in accordance with their fuel efficiency.	1979 (When the Fuel Efficiency Standards were determined based on the Energy Saving Law)	MLIT, METI		NE
Promotion of Traffic Flow Improvements and Promotion of the Environmentally-friendly Usages of Vehicles*	Transport	CO <sub>2</sub>	Reduce CO <sub>2</sub> emissions from energy consumption in the transport sector through promotion of Traffic Flow Improvements.	Other (Budget/Subsidy, Awareness Raising)	Implemented	The Government is implementing various traffic flow improvements to ensure that drivers will experience comfortable driving without having to worry about traffic congestion. These improvements include enhancement of ring roads and other arterial road networks, which also ultimately help reduce CO <sub>2</sub> emissions, and promoting smart use of existing road networks.	2012 (Priority Plan for Social Infrastructure Development)	MLIT		NE

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Promotion of the Use of Public Transports*	Transport	CO <sub>2</sub>	Reduce CO <sub>2</sub> emissions from energy consumption in the transport sector by improving the service and convenience of trains and buses as well as promoting eco-commuting.	Other (Taxation, Budget/Subsidy, Awareness Raising)	Implemented	The Government will reconstruct the public transport networks in communities and improve their convenience by installing BRT and LRT, developing new line railroad, installing transport connection information system and location system for buses etc.	1992	MLIT		NE
Promoting Low-Carbonization of Railway, Vessel and Aviation*	Transport	CO <sub>2</sub>	Reduce CO <sub>2</sub> emissions from energy consumption in the transport sector by promoting the development and introduction of energy-efficient railways, vessels and aircraft.	Other (Taxation, Budget/Subsidy, Financing, Technology Development)	Implemented	The Eco-Rail Line project, which will implement the introduction of highly energy efficient vehicles and renewable energy to railway facilities etc. will be promoted. Manufacturing of vessels with energy-saving equipment and alternation to the manufacturing of vessels with energy-efficient equipment will be promoted. The Government will promote efficient operating method for aircrafts and low-carbonization of airport facilities including increased use of ground power unit (GPU) etc.	2005	MLIT		NE
More Efficient Logistics/Modal shifts etc.*	Transport	CO <sub>2</sub>	Reduce CO <sub>2</sub> emissions from energy consumption in the transport sector by improving the efficiency of truck transport and promoting modal shifts to trains and coastal shipping.	Other (Taxation, Budget/Subsidy, Financing, Awareness Raising)	Implemented	The Government will improve the efficiency of truck transport by encouraging the use of larger trucks such as large CNG trucks and promoting cooperative transport and delivery by logistics operators etc. within regions. Introduction of large containers (over 31ft), which is efficient to promote phasing out from larger trucks use and promotion of eco-rail mark etc. will be promoted to achieve the modal shift to rail freight transport and introduction of trucks with separable trailers and promotion of eco-ship mark etc. will be promoted to achieve the modal shift to maritime vessel transport. The Government will aim at further reduction of environmental load by strengthening a partnership between owners of goods and operators of logistics.	2001	MLIT		NE

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Promotion of Power from Renewable Energy Sources*	Energy	CO <sub>2</sub>	Reduce CO <sub>2</sub> emissions from energy supply by promoting the thorough use of renewable energies such as onshore/offshore wind power, solar power, small-scale hydro power, geothermal power and biomass.	Other (Law, Budget/Subsidy, Taxation, Technology Development)	Implemented	<p>The Government will continue to operate the feed in tariff scheme appropriately and revise it, balancing the maximization of expansion of implementation of renewable energy and suppressing the burden on the people. For land based wind energy, the Government will streamline environmental impact assessments and strengthen the transmission system within districts and inter district power system, with a view to maximizing the use of appropriate land such as Hokkaido and the Tohoku district. The Government will also make efforts to expand implementation by further considering ways to facilitate coordination and ease regulation on treating cropland conversion for locations and make efforts to rationalize regulations and institutions as necessary.</p> <p>For the promotion of geothermal power generation, the Government will work on the regulatory and institutional reform including streamlining the procedure of environmental impact assessment and rationalization of the safety regulations to enhance the use of small-scale geothermal power generation using the existing wells at hot springs, and promote understanding of people in the local level.</p> <p>For biomass energy, the Government will focus on the promotion of industrialization and introduction of biomass energy by establishing the framework to promote actions aiming at developing the primary sector with using the renewable energy and achieving the use of local biomass energy in approximately 100 regions in 5 years. The Government will support</p>	n/a	METI, MOE, Related Ministries and Agencies		NE

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Persuasion of High Efficiency in Thermal Power Generation*	Energy	CO <sub>2</sub>	Establishment of effective framework of global warming countermeasures (voluntary framework) by the power industry, and make efforts to improve power generation efficiency further by advancing technology development.	Other (Law/Standard, Budget/Subsidy, Technology Development)	Implemented	As for thermal power generation, effective mitigation measures by power sectors are essential in a consistent manner with national reduction target. Hence, the reduction of environmental burdens should be attained as well by promoting the improvement of power efficiency and the replacement of the old electric power facilities with new ones through the voluntary initiatives of stakeholders of power generation and so forth. In order to improve the efficiency of thermal power as envisaged in the energy mix, the Government aims to achieve combined-cycle level LNG thermal power generation and ultra-supercritical (USC) level coal-fired power generation, as well as reviewing the standards of judgment of the Act on the Rational Use of Energy intending to restrain the operation of inefficient thermal power plants, and to replace old thermal power plants with new ones. In addition, through environmental impact assessments of construction of each thermal power plant, the Government examines, in the necessary and rational range, whether business operators are making efforts to reduce environmental burdens by using best available technology or not, as well as whether the consistency with Japan's target and plan of CO <sub>2</sub> emissions reduction is secured or not. Moreover, 35 operators of electric utilities formulated and announced the "voluntary framework" in July 2015, and they are considering the formulation of concrete mechanism and rules for the achievement of the goal of voluntary framework by operators of	n/a	METI, MOE		NE
Increased Use of Blended Cement*	Industry/industrial processes	CO <sub>2</sub>	Reduce CO <sub>2</sub> emissions in the cement production process by reducing the production volume of clinker through increased production proportion and expanded use of blended cement, which is made by mixing blast-furnace slag with clinker, an intermediate cement product.	Other (Law/Standard, Awareness Raising)	Implemented	Based on the Act on Promotion of Procurement of Eco-Friendly Goods and Services by the State and Other Entities (Act on Green Purchasing), the Government will encourage the use of blended cement in public construction. Buildings using blended cement will be certificated as low-carbon buildings based on the "Low Carbon City Act".	Year 2001 (Based on Act on Green Purchasing, blended cement is designated as the eco-friendly goods.)	MOE, METI		730

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Promotion of Waste Reduction and Recycling*	Waste management/waste	CO <sub>2</sub>	Reduce CO <sub>2</sub> emissions from waste incineration by promoting the waste reduction and recycling.	Other (Law/Standard, Budget/Subsidy, Awareness Raising)	Implemented	The Government will promote 3Rs initiatives for achieving the targets set out in the "Basic Plan for Establishing a Recycling-Based Society", formulated in accordance with the "Basic Act on Establishing a Sound Material-Cycle Society" (Basic Recycling Law) as well as the waste reduction targets set out in the "Waste Management and Public Cleansing Law" in line with the target set in Basic Recycling Law. Specifically, the Government will promote waste reduction and recycling by thorough waste sorting and collection as well as imposition of charges for waste collection by municipal governments, actions complying with individual Recycling Laws and actions based on the Guidelines for Controlling Greenhouse Gas Emissions. Also, the amount of incinerated wastes will be reduced by promoting the arrangement of waste disposal facilities which contribute to the realization of 3Rs in line with the waste disposal facilities development plan based on the "Waste Management and Public Cleansing Law".	2013	MOE		200.00
Reducing direct landfill disposal of organic waste*	Waste management/waste	CH <sub>4</sub>	Reduce methane emissions associated with waste landfill, by promoting the reduction of organic waste such as garbage going directly to landfill.	Other (Law/Standard, Budget/Subsidy, Awareness Raising)	Implemented	The Government will promote 3Rs initiatives for achieving the targets set out in the "Basic Plan for Establishing a Recycling-Based Society", formulated in accordance with the "Basic Act on Establishing a Sound Material-Cycle Society" (Basic Recycling Law) as well as the waste reduction targets set out in the "Waste Management and Public Cleansing Law" in line with the target set in Basic Recycling Law. Specifically, the Government will promote waste reduction and recycling by thorough waste sorting and collection as well as imposition of charges for waste collection by municipal governments, reducing illegal dumping of industrial wastes through more strict waste disposal systems and the development of model disposal operators, and actions complying with individual Recycling Laws and actions based on the Guidelines for Controlling Greenhouse Gas Emissions. At the same time, the Government will reduce the amount of direct landfill of organic waste by promoting the improvement of the systems for waste disposal facilities of municipalities, including through banning the direct disposal to landfill of organic wastes in principle, in accordance with the waste disposal facilities development plan based on the "Waste Management and Public Cleansing Law".	2013	MOE		476.19

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Improvement of the Management of Organic Matter and Water*	Agriculture	CH <sub>4</sub>	Reduce methane emissions associated with rice cultivation by promoting the replacement from plowing in rice straw which has relatively higher methane emission intensity with application of compost which has lower emission intensity.	Other (Law/Standard, Budget/Subsidy)	Implemented	The Government will support the initiatives to enable replacing the conventional approach of plowing in rice straw with application of compost such as installing compost generating facilities and converting agricultural activities into ones which are effective for global warming mitigation. Through the reduction of methane emissions, the Government will contribute to sustainable agricultural production harmonized with the environment.	2007	MAFF		627.5
Upgrading combustion technology at sewage sludge incineration facilities*	Waste management/waste	N <sub>2</sub> O	Reduce nitrous oxide from the incineration of sewage sludge by improving the incineration technology of facilities for sewage sludge and converting it into solid fuel.	Other (Taxation, Budget/Subsidy, Technology Development)	Implemented	The Government will support the development of turbo incinerators and will support construction and update of high-temperature incinerators. The Government will also conduct practical research of technologies of solid fuel power generator which uses waste heat, and will provide tax exemption on investing in obtaining facilities for storing solid fuel derived from sewage mire.	2001 (the level of sophistication of combusting sewage sludge at sewage treatment facilities was standardized)	MLIT		NE
Upgrading combustion technology at general waste incineration facilities*	Waste management/waste	N <sub>2</sub> O	Reduce nitrous oxide from waste incineration by promoting more advanced incineration technology for facilities for general waste and the 3Rs for waste products.	Other (Law/Standard, Budget/Subsidy, Awareness Raising)	Implemented	The Government will promote the upgrade of combustion technology at general waste incineration facilities such as implementing consecutive operation of consecutive incinerator. The Government will reduce the amount of waste incineration by promoting the 3Rs initiatives for achieving the targets set out in the "Basic Plan for Establishing a Recycling-Based Society", formulated in accordance with the "Basic Act on Establishing a Sound Material-Cycle Society" (Basic Recycling Law) as well as the waste reduction targets set out in the "Waste Management and Public Cleansing Law" in line with the target set in Basic Recycling Law, and by promoting the arrangement of waste disposal facilities which contribute to the realization of 3Rs in line with the waste disposal facilities development plan based on the "Waste Management and Public Cleansing Law".	2013	MOE		NE
Appropriation and Reduction of the Amount of Fertilizer Used*	Agriculture	N <sub>2</sub> O	Reduce nitrous oxide emissions associated with the application of fertilizers through the use of lower fertilizer application rates, split-application regimes and slow-release fertilizers.	Other (Law/Standard, Budget/Subsidy)	Implemented	For nitrous oxide associated with the application of fertilizers, the Government will provide support for fertilization plan revision to reduce amount of fertilizer as well as agricultural activities which are effective for the global warming mitigation. Through the reduction of nitrous oxide, the Government will contribute to sustainable agriculture production harmonized with the environment.	2007	MAFF		72.00

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

Name of mitigation action <sup>a</sup>	Sector(s) affected <sup>b</sup>	GHG(s) affected	Objective and/or activity affected	Type of instrument <sup>c</sup>	Status of implementation <sup>d</sup>	Brief description <sup>e</sup>	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO <sub>2</sub> eq)	
Holistic policies to reduce the emissions of fluorinated gases*	Industry/industrial processes	HFCs, PFCs, SF <sub>6</sub> , NF <sub>3</sub>	Reduce emissions of HFCs, PFCs, SF <sub>6</sub> and NF <sub>3</sub> , by implementing holistic policies such as the Act on Rational Use and Proper Management of Fluorocarbons.	Other (Law/Standard, Taxation, Budget/Subsidy, Technology Development, Awareness Raising, Education, Voluntary Agreement)	Implemented	According to the Act on Rational Use and Proper Management of Fluorocarbons (June 2013), the Government will work on the following: practically phasing down fluorocarbons by gas suppliers, eliminating fluorocarbons from products and lowering GWP of products by manufacturers of equipment and products, preventing leakage of fluorocarbons from refrigeration and air conditioning equipment for business use during normal operation period by end-users, and enhancing and strengthening regulations on recycling and destruction programs. In addition, the Government will promote the technological development of fluorocarbon-free equipment and support for the introduction of such equipment as well as the promotion of the Voluntary Action Plan in industry.	2001 (Fluorocarbons Recovery and Destruction Law was adopted)	MOE, METI		18500.00
Forest Sink Strategies*	Forestry/LULUC F	CO <sub>2</sub>	Maintain and strengthen the CO <sub>2</sub> absorption functions of forests through appropriate management of forests such as thinning.	Other (Law/Standard, Budget/Subsidy, Technology Development, Awareness Raising)	Implemented	In accordance with the "Basic Plan for Forest and Forestry" and the "Act on Special Measures concerning Advancement of Implementation of Forest Thinning, etc." (2013), the Government aims to attain the forest sink target approximately 38 million t-CO <sub>2</sub> or more (based on specific assumptions). In order to attain this target, the Government is working on the following through a variety of policy approaches: appropriate forest development such as thinning and afforestation, the proper management and preservation of protected and other forests, promoting the use of timber and woody biomass, promoting forest development programs where people participate in, accelerated implementation of initiatives to establish sustainable forest management practices, and promoting measures to diffuse seeds and seedlings that grow well.	2007	MAFF		38,000.00
Measures for Sinks in Agricultural Soils*	Forestry/LULUC F	CO <sub>2</sub>	Promote carbon storage in cropland and grassland soils through the promotion of domestic agriculture production as well as the making of soils by applying organic matter such as compost and green manure.	Other (Law/Standard, Budget/Subsidy, Technology Development, Awareness Raising)	Implemented	It is proven that the carbon storage in cropland and grassland soils in Japan can be increased by continuous usage of organic matter such as compost and green manure. The Government will contribute to the carbon storage in cropland and grassland soils by promoting domestic agriculture production as well as the making of soils by applying organic matter such as compost and green manure.	2008	MAFF		7682

Table 3

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

Name of mitigation action <sup>a</sup>	Sector(s) affected <sup>b</sup>	GHG(s) affected	Objective and/or activity affected	Type of instrument <sup>c</sup>	Status of implementation <sup>d</sup>	Brief description <sup>e</sup>	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO <sub>2</sub> eq)	
Promotion of Urban Greening*	Forestry/LULUC F	CO <sub>2</sub>	Promote urban greening to preserve and strengthen their carbon sink capacity.	Other (Law/Standard, Budget/Subsidy, Technology Development, Awareness Raising)	Implemented	Actions will be promoted such as park maintenance, greening in roads and bays, and creation of the new greening spaces at buildings. Improvement in report and verification system for the urban greening will also be strategically carried out.	2006	MLIT		1186
Establishment and implementation of the Joint Crediting Mechanism (JCM)*	Cross-cutting	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O, HFCs, PFCs, SF <sub>6</sub> , NF <sub>3</sub>	To appropriately evaluate contributions from Japan to GHG emission reductions or removals in a quantitative manner achieved through the diffusion of low carbon technologies, products, systems, services, and infrastructure as well as implementation of mitigation actions in developing countries, and to use them to achieve Japan's emission reduction target.	Other (Budget/Subsidy)	Implemented	Since Japan and Mongolia signed bilateral documents in January 2013 for the first time to start this mechanism, the number of partner countries has increased to 16 as of the end of December 2015. This means that the target to double the number of partner countries in 3 years from November 2013 has been achieved a year in advance. So far, the Joint Committee was held 26 times in total, eight JCM projects are registered in four countries (Indonesia, Palau, Mongolia and Vietnam) and 19 JCM methodologies are approved. The government continues to support the further formulation of JCM projects and to increase the number of partner countries.	2013	MOFA, METI, MOE, MAFF		NE
GHG Emissions Accounting, Reporting and Disclosure Program*	Cross-cutting	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O, HFCs, PFCs, SF <sub>6</sub> , NF <sub>3</sub>	Make it mandatory for those who exceed more than a certain amount of greenhouse gas emissions to calculate emission volume and report it to the Government. The reported data is collected and published by the Government.	Other (Law/Standard, Budget/Subsidy, Awareness Raising)	Implemented	GHG Emissions Accounting, Reporting and Disclosure Program is based on the "Act on Promotion of Global Warming Countermeasures", which facilitate proactive emission reduction by the greenhouse gas emitters through the Government's adequate review of greenhouse gases subjected to reporting based on Intergovernmental Panel on Climate Change (IPCC) guidelines, as well as through accurate report, prompt collection and disclosure of emission information.	2006	MOE, METI		
Making the Tax System Greener*	Cross-cutting	CO <sub>2</sub>	The Government will pursue greening of the entire tax system including energy and vehicle taxes.	Other (Taxation)	Implemented	The Government will utilize the tax revenue of "Tax for Climate Change Mitigation", designed to add an extra tax multiplier commensurate with CO <sub>2</sub> emission levels from the all fossil fuel combustion and will firmly implement the various policies to curb energy-related CO <sub>2</sub> emissions. Additionally, the Government will also promote taxation system on vehicle taxes according to the environmental impact and strengthen greener taxation.	n/a	MOE		

Table 3

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

Name of mitigation action <sup>a</sup>	Sector(s) affected <sup>b</sup>	GHG(s) affected	Objective and/or activity affected	Type of instrument <sup>c</sup>	Status of implementation <sup>d</sup>	Brief description <sup>e</sup>	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO <sub>2</sub> eq)	
Promotion of Environmentally-conscious business activities*	Cross-cutting	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O, HFCs, PFCs, SF <sub>6</sub> , NF <sub>3</sub>	Formulate and publish the guidelines for measures to be taken by business operators in controlling greenhouse gas emissions generating from their business activities.	Other (Law/Standard, Budget/Subsidy, Awareness Raising)	Implemented	The Government will promote voluntary and active actions by business operators to implement environmentally-conscious business activities through the formulation of 'Guidelines for Controlling Greenhouse Gas Emissions' based on the Law for Promotion of Global Warming Countermeasures. In addition, the Government will review the guidelines based on the trends of available cutting-edge technologies in the fields.	2008	MOE, METI, MAFF		

Table 3

JPN\_BR2\_v3.0

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

Name of mitigation action <sup>a</sup>	Sector(s) affected <sup>b</sup>	GHG(s) affected	Objective and/or activity affected	Type of instrument <sup>c</sup>	Status of implementation <sup>d</sup>	Brief description <sup>e</sup>	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO <sub>2</sub> eq)	
Greening Finance*	Cross-cutting	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O, HFCs, PFCs, SF <sub>6</sub> , NF <sub>3</sub>	Provide financial supports to mobilize private funds into low-carbon projects such as providing equity investment into low-carbon projects and leasing of low-carbon equipment to reduce the burden of up-front costs. In addition, the Government will promote loans based on environmental responsibility ratings and ESG investment.	Other (Budget/Subsidy, Awareness Raising)	Implemented	The Government will establish a fund for promoting regional low-carbon investments that invests in low-carbon projects in order to stimulate private investment. To reduce the burdens of a large amount of initial investment costs for households and business operators, the Government will subsidize them when they lease low-carbon equipment. The Government will promote environmental finance by providing interest subsidies and support the principles for financial action towards a sustainable society, etc.	2007	MOE		
Promoting J-Credit system*	Cross-cutting	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O, HFCs, PFCs, SF <sub>6</sub> , NF <sub>3</sub>	Certify domestic greenhouse gas emission reductions and removals.	Other (Budget/Subsidy)	Implemented	The Government will operate a system that certifies emission reductions and absorptions in Japan as J-credits, which can be used for various purposes such as achieving the goals of the Commitment to a Low-Carbon Society as well as carbon offsets.	2013	MOE, METI, MAFF		
Developing Public Campaigns*	Cross-cutting	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O, HFCs, PFCs, SF <sub>6</sub> , NF <sub>3</sub>	Foster the understanding of global warming countermeasures and promote the transformation of lifestyle habits into one that are appropriate for a low carbon society as well as the penetration of its effects.	Other (Budget/Subsidy, Awareness Raising)	Implemented	The Government will enhance public understanding of global warming issues by providing clear information on adverse impacts of global warming. In addition, under the key concept of "COOL CHOICE," a national campaign will be developed by encouraging all possible "cool choices" to contribute to Global Warming Prevention such as energy-saving / low-carbon products / services / actions, etc.	2005	MOE		

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

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

<sup>a</sup> Parties should use an asterisk (\*) to indicate that a mitigation action is included in the 'with measures' projection.

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

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

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

<sup>e</sup> Additional information may be provided on the cost of the mitigation actions and the relevant timescale.

<sup>f</sup> Optional year or years deemed relevant by the Party.

**Custom Footnotes**

**Reporting on progress<sup>a, b</sup>**

<i>Year<sup>c</sup></i>	<i>Total emissions excluding LULUCF</i>	<i>Contribution from LULUCF<sup>d</sup></i>	<i>Quantity of units from market based mechanisms under the Convention</i>		<i>Quantity of units from other market based mechanisms</i>	
	<i>(kt CO<sub>2</sub> eq)</i>	<i>(kt CO<sub>2</sub> eq)</i>	<i>(number of units)</i>	<i>(kt CO<sub>2</sub> eq)</i>	<i>(number of units)</i>	<i>(kt CO<sub>2</sub> eq)</i>
(FY2005)	1,396,510.56	NA	0.00	0.00	0.00	0.00
2010	1,304,299.73	NA	0.00	0.00	0.00	0.00
2011	1,354,313.88	NA	0.00	0.00	0.00	0.00
2012	1,390,484.55	NA	0.00	0.00	0.00	0.00
2013	1,407,774.97	60,563.82	0.00	0.00	0.00	0.00
2014	NE	NE	0.00	0.00	0.00	0.00

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

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

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

<sup>c</sup> Parties may add additional rows for years other than those specified below.

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

**Custom Footnotes**

**Progress in achieving the quantified economy-wide emission reduction targets – further information on mitigation actions relevant to the contribution of the land use, land-use change and forestry sector in 2013 <sup>a,b</sup>**

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

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

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

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

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

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

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

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

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

**Custom Footnotes**

**Progress in achieving the quantified economy-wide emission reduction targets – further information on mitigation actions relevant to the contribution of the land use, land-use change and forestry sector in 2014<sup>a, b</sup>**

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

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

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

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

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

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

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

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

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

**Custom Footnotes**

Table 4(a)II

JPN\_BR2\_v3.0  
Source: Submission 2016 v5, JAPAN

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

GREENHOUSE GAS SOURCE AND SINK ACTIVITIES	Base year <sup>d</sup>	Net emissions/removals <sup>e</sup>									<r xmlns="http://schemas.o penxmlform ats.org/spre	<r xmlns="http://schemas.o penxmlform ats.org/spre	
		2013	2014	2015	2016	2017	2018	2019	2020	Total <sup>f</sup>			
(kt CO <sub>2</sub> eq)													
<b>A. Article 3.3 activities</b>													
<b>A.1. Afforestation/reforestation</b>			-492.05									-492.05	-492.05
Excluded emissions from natural disturbances(5)			NA									NA	NA
Excluded subsequent removals from land subject to natural disturbances(6)			NA									NA	NA
A.2. Deforestation			1,663.43									1,663.43	1663.43145
<b>B. Article 3.4 activities</b>													
<b>B.1. Forest management</b>													
Net emissions/removals <sup>e</sup>			-50,703.30									-50,703.30	
Excluded emissions from natural disturbances(5)			NA									NA	
Excluded subsequent removals from land subject to natural disturbances(6)			NA									NA	
Any debits from newly established forest (CEF-ne)(7),(8)			NA									NA	
Forest management reference level (FMRL)(9)			0.00									0.00	
Technical corrections to FMRL(10)			2,007.72									2,007.72	
Forest management cap <sup>l</sup>													-362404
B.2. Cropland management (if elected)	10344.15355		3,568.41									3,568.41	10344.15355 -6775.74526
B.3. Grazing land management (if elected)	848.01261		-292.05									-292.05	848.01261 -1140.06363
B.4. Revegetation (if elected)	-77.74114		-1,186.11									-1,186.11	-77.74114 -1108.37162
B.5. Wetland drainage and rewetting (if elected)	NA		NA									NA	NA

Note: 1 kt CO<sub>2</sub> eq equals 1 Gg CO<sub>2</sub> eq.

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

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

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

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

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

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

<sup>f</sup> Additional columns for relevant years should be added, if applicable.

<sup>g</sup> Cumulative net emissions and removals for all years of the commitment period reported in the current submission.

<sup>h</sup> The values in the cells "3.3 offset" and "Forest management cap" are absolute values.

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

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

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

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

#### Custom Footnotes

#### Documentation Box:

**Reporting on progress<sup>a, b, c</sup>**

<i>Units of market based mechanisms</i>			<i>Year</i>	
			<i>2013</i>	<i>2014</i>
<i>Kyoto Protocol units<sup>d</sup></i>	<i>Kyoto Protocol units</i>	<i>(number of units)</i>	0.00	0.00
		<i>(kt CO<sub>2</sub> eq)</i>	0.00	0.00
	<i>AAUs</i>	<i>(number of units)</i>	0.00	0.00
		<i>(kt CO<sub>2</sub> eq)</i>	0.00	0.00
	<i>ERUs</i>	<i>(number of units)</i>	0.00	0.00
		<i>(kt CO<sub>2</sub> eq)</i>	0.00	0.00
	<i>CERs</i>	<i>(number of units)</i>	0.00	0.00
		<i>(kt CO<sub>2</sub> eq)</i>	0.00	0.00
	<i>tCERs</i>	<i>(number of units)</i>	0.00	0.00
		<i>(kt CO<sub>2</sub> eq)</i>	0.00	0.00
	<i>ICERs</i>	<i>(number of units)</i>	0.00	0.00
		<i>(kt CO<sub>2</sub> eq)</i>	0.00	0.00
<i>Other units<sup>d,e</sup></i>	<i>Units from market-based mechanisms under the Convention</i>	<i>(number of units)</i>		
		<i>(kt CO<sub>2</sub> eq)</i>		
	<i>Units from other market-based mechanisms</i>	<i>(number of units)</i>	0.00	0.00
		<i>(kt CO<sub>2</sub> eq)</i>	0.00	0.00
	<i>JCM</i>	<i>(number of units)</i>	0.00	0.00
<i>(kt CO<sub>2</sub> eq)</i>		0.00	0.00	
<i>Total</i>	<i>(number of units)</i>	0.00	0.00	
	<i>(kt CO<sub>2</sub> eq)</i>	0.00	0.00	

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

Note: 2011 is the latest reporting year.

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

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

<sup>c</sup> Parties may include this information, as appropriate and if relevant to their target.

<sup>d</sup> Units surrendered by that Party for that year that have not been previously surrendered by that or any other Party.

<sup>e</sup> Additional rows for each market-based mechanism should be added, if applicable.

**Custom Footnotes**

Table 5

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

<i>Key underlying assumptions</i>		<i>Historical<sup>b</sup></i>							Projected		
<i>Assumption</i>	<i>Unit</i>	1990	1995	2000	2005	2010	2011	2015	2020	2025	2030
<i>real GDP</i>	<i>trillion(2005)yen</i>			476.72	507.16	512.42	514.16		610.60	NE	711.00
Population	thousands	123,611.00		126,926.00	127,766.00	128,058.00	127,799.00		124,099.93	NE	116,617.66
Number of households	thousands	40,670.00		46,782.00	49,062.53	51,842.31	52,054.59		53,053.17	NE	51,230.53
crude steel production	10 <sup>6</sup> t	112.00		107.00	113.00	111.00	106.00		NE	NE	120.00
cement production	10 <sup>6</sup> t	87.00		79.00	74.00	56.00	58.00		NE	NE	56.00
ethylene production	10 <sup>6</sup> t	6.00		7.20	7.50	7.00	6.50		NE	NE	5.70
paper and paperboard production	10 <sup>6</sup> t	29.00		30.00	31.00	27.00	27.00		NE	NE	27.00
<i>Commercial floor area</i>	<i>10<sup>6</sup>m<sup>2</sup></i>				1,759.43	1,831.11	1,828.18		NE	NE	1,971.00

<sup>a</sup> Parties should include key underlying assumptions as appropriate.

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

***Custom Footnotes***

Table 6(a)

JPN\_BR2\_v3.0

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

	GHG emissions and removals <sup>b</sup>							GHG emission projections	
	(kt CO <sub>2</sub> eq)							(kt CO <sub>2</sub> eq)	
	Base year (FY2005)	1990	1995	2000	2005	2010	2013	2020	2030
<b>Sector<sup>d,e</sup></b>									
Energy	1,009,693.34	885,396.80	925,474.99	954,740.03	1,009,693.34	945,267.60	1,041,552.79	1,053,578.32	784,200.00
Transport	235,977.66	204,473.71	245,105.82	253,562.89	235,977.66	217,875.05	217,945.91	194,840.61	165,500.00
Industry/industrial processes	84,728.60	109,251.91	135,031.55	106,591.43	84,728.60	78,197.45	86,929.33	93,001.43	74,800.00
Agriculture	40,015.02	42,925.22	42,211.10	40,103.68	40,015.02	40,697.06	39,530.76	38,723.08	37,500.00
Forestry/LULUCF	-89,643.58	-58,481.33	-74,081.90	-86,398.90	-89,643.58	-69,366.58	-64,659.80	-36,404.03	-25,900.00
Waste management/waste	26,095.94	28,199.46	31,463.93	31,011.44	26,095.94	22,262.58	21,816.18	19,321.96	17,300.00
Other (specify)									
<b>Gas</b>									
CO <sub>2</sub> emissions including net CO <sub>2</sub> from LULUCF	1,214,416.17	1,095,511.96	1,166,296.54	1,185,757.74	1,214,416.17	1,141,892.69	1,245,764.48	1,261,710.51	971,600.00
CO <sub>2</sub> emissions excluding net CO <sub>2</sub> from LULUCF	1,304,375.96	1,154,402.75	1,240,762.63	1,272,504.83	1,304,375.96	1,211,534.60	1,310,691.42	1,298,375.21	997,800.00
CH <sub>4</sub> emissions including CH <sub>4</sub> from LULUCF	39,029.18	48,659.34	45,895.16	41,571.98	39,029.18	38,322.66	36,099.86	33,988.76	31,700.00
CH <sub>4</sub> emissions excluding CH <sub>4</sub> from LULUCF	38,962.32	48,586.36	45,825.27	41,505.28	38,962.32	38,263.04	36,042.07	33,932.91	31,600.00
N <sub>2</sub> O emissions including N <sub>2</sub> O from LULUCF	25,760.31	32,239.90	33,541.19	30,343.75	25,760.31	23,516.33	22,667.43	21,762.11	21,300.00
N <sub>2</sub> O emissions excluding N <sub>2</sub> O from LULUCF	25,510.95	31,903.42	33,226.89	30,062.27	25,510.95	23,300.62	22,458.07	21,557.28	21,100.00
HFCs	12,724.24	15,932.31	25,212.33	22,846.61	12,724.24	23,114.01	31,776.63	38,300.00	21,600.00
PFCs	8,623.35	6,539.30	17,609.92	11,873.11	8,623.35	4,249.54	3,280.06	4,000.00	4,200.00
SF <sub>6</sub>	5,063.86	12,850.07	16,447.52	7,031.36	5,063.86	2,468.45	2,165.76	2,400.00	2,700.00
Other (specify)	1,249.87	32.89	202.81	186.01	1,249.87	1,369.46	1,360.96	1,000.00	500.00
NF <sub>3</sub>	1,249.87	32.89	202.81	186.01	1,249.87	1,369.46	1,360.96	1,000.00	500.00
<b>Total with LULUCF<sup>f</sup></b>	1,306,866.98	1,211,765.77	1,305,205.47	1,299,610.56	1,306,866.98	1,234,933.14	1,343,115.18	1,363,161.37	1,054,000.00
								*	*
<b>Total without LULUCF</b>	1,396,510.55	1,270,247.10	1,379,287.37	1,386,009.47	1,396,510.55	1,304,299.72	1,407,774.97	1,399,465.40	1,079,000.00
								*	*

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

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

**Information on updated greenhouse gas projections under a ‘with measures’ scenario<sup>a</sup>**

	<i>GHG emissions and removals<sup>b</sup></i>							GHG emission projections	
	<i>(kt CO<sub>2</sub> eq)</i>							<i>(kt CO<sub>2</sub> eq)</i>	
	<i>Base year (FY2005)</i>	1990	1995	2000	2005	2010	2013	2020	2030

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

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

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

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

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

**Custom Footnotes**

Totals values have been overwritten, updated values are marked with an asterisk(\*) next to them. Please update the table accordingly to match the totals.

Table 7

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**Provision of public financial support: summary information in 2013<sup>a</sup>**

Allocation channels	Year									
	Japanese yen - JPY					USD <sup>b</sup>				
	Core/ general <sup>c</sup>	Climate-specific <sup>d</sup>				Core/ general <sup>c</sup>	Climate-specific <sup>d</sup>			
Mitigation		Adaptation	Cross-cutting <sup>e</sup>	Other <sup>f</sup>	Mitigation		Adaptation	Cross-cutting <sup>e</sup>	Other <sup>f</sup>	
<b>Total contributions through multilateral channels:</b>	237,743.90	NE		NE		2,337.24	NE		NE	
Multilateral climate change funds <sup>g</sup>	14,191.99	NE		NE		139.52	NE		NE	
Other multilateral climate change funds <sup>h</sup>	2,040.94	NE		NE		20.06	NE		NE	
Multilateral financial institutions, including regional development banks	194,941.27			NE		1,916.45			NE	
Specialized United Nations bodies	28,610.64			NE		281.27			NE	
<b>Total contributions through bilateral, regional and other channels</b>		638,859.00	163,982.00	18,299.00			6,280.54	1,612.08	179.90	
<b>Total</b>	237,743.90	638,859.00	163,982.00	18,299.00		2,337.24	6,280.54	1,612.08	179.90	

Abbreviation: USD = United States dollars.

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

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

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

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

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

<sup>f</sup> Please specify.

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

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

**Custom Footnotes**

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

**Documentation Box:**

Table 7

JPN\_BR2\_v3.0

**Provision of public financial support: summary information in 2014<sup>a</sup>**

Allocation channels	Year									
	Japanese yen - JPY					USD <sup>b</sup>				
	Core/ general <sup>c</sup>	Climate-specific <sup>d</sup>				Core/ general <sup>c</sup>	Climate-specific <sup>d</sup>			
		Mitigation	Adaptation	Cross-cutting <sup>e</sup>	Other <sup>f</sup>		Mitigation	Adaptation	Cross-cutting <sup>e</sup>	Other <sup>f</sup>
<b>Total contributions through multilateral channels:</b>	260,388.71	NE	NE	NE		2,559.83	NE	NE	NE	
Multilateral climate change funds <sup>g</sup>	17,488.14	NE	NE	NE		171.91	NE	NE	NE	
Other multilateral climate change funds <sup>h</sup>	2,394.49	NE	NE	NE		23.53	NE	NE	NE	
Multilateral financial institutions, including regional development banks	211,139.97			NE		2,075.69			NE	
Specialized United Nations bodies	31,760.60			NE		312.23			NE	
<b>Total contributions through bilateral, regional and other channels</b>		747,269.00	75,786.00	12,236.00			7,346.33	745.03	120.29	
<b>Total</b>	260,388.71	747,269.00	75,786.00	12,236.00		2,559.83	7,346.33	745.03	120.29	

Abbreviation: USD = United States dollars.

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

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

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

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

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

<sup>f</sup> Please specify.

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

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

**Custom Footnotes**

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

**Documentation Box:**

Table 7(a)

JPN\_BR2\_v3.0

**Provision of public financial support: contribution through multilateral channels in 2013<sup>a</sup>**

Donor funding	Total amount				Status <sup>b</sup>	Funding source <sup>f</sup>	Financial instrument <sup>f</sup>	Type of support <sup>f,g</sup>	Sector <sup>c</sup>
	Core/general <sup>d</sup>		Climate-specific <sup>e</sup>						
	Japanese yen - JPY	USD	Japanese yen - JPY	USD					
Total contributions through multilateral channels	237,743.90	2,337.24	NE	NE					
Multilateral climate change funds <sup>g</sup>	14,191.99	139.52	NE	NE					
1. Global Environment Facility	12,094.27	118.90	NE	NE	Provided	ODA	Grant	Cross-cutting	
2. Least Developed Countries Fund									
3. Special Climate Change Fund									
4. Adaptation Fund									
5. Green Climate Fund									
6. UNFCCC Trust Fund for Supplementary Activities	56.78	0.56	NE	NE	Provided	OOF	Grant	Cross-cutting	
7. Other multilateral climate change funds	2,040.94	20.06	NE	NE					
(1) The Multilateral Fund for the Implementation of the Montreal Protocol	1,747.64	17.18	NE	NE	Provided	ODA	Grant	Mitigation	
(2) Vinna Convention and the Montreal Protocol	50.06	0.49	NE	NE	Provided	ODA	Grant	Mitigation	
(3) Asia-Pacific Network for Global Change Research (APN)	243.24	2.39	NE	NE	Provided	ODA	Grant	Cross-cutting	
Multilateral financial institutions, including regional development banks	194,941.27	1,916.45	NE	NE					
1. World Bank	8,281.90	81.42	NE	NE	Provided	ODA	Grant	Cross-cutting	
2. International Finance Corporation	680.40	6.69	NE	NE	Provided	ODA	Grant	Cross-cutting	
3. African Development Bank	372.60	3.66	NE	NE	Provided	ODA	Grant	Cross-cutting	
4. Asian Development Bank	6,936.13	68.19	NE	NE	Provided	ODA	Grant	Cross-cutting	
5. European Bank for Reconstruction and Development	49.07	0.48	NE	NE	Provided	ODA	Grant	Cross-cutting	
6. Inter-American Development Bank	796.07	7.83	NE	NE	Provided	ODA	Grant	Cross-cutting	
7. Other	177,825.10	1,748.18	NE	NE					
(1) International Development Association	111,178.55	1,092.99	NE	NE	Provided	ODA	Equity	Cross-cutting	
(2) African Development Fund	12,813.75	125.97	NE	NE	Provided	ODA	Equity	Cross-cutting	
(3) Asian Development Fund	39,269.74	386.06	NE	NE	Provided	ODA	Grant	Cross-cutting	
(4) Fund for Special Operations (IDB)	583.33	5.73	NE	NE	Provided	ODA	Grant	Cross-cutting	
(5) African Development Bank	2,100.87	20.65	NE	NE	Provided	ODA	Equity	Cross-cutting	
(6) Asian Development Bank	10,216.92	100.44	NE	NE	Provided	ODA	Equity	Cross-cutting	
(7) Inter-American Development Bank	1,580.76	15.54	NE	NE	Provided	ODA	Equity	Cross-cutting	
(8) Inter-American Investment Corporation	81.18	0.80	NE	NE	Provided	ODA	Equity	Cross-cutting	
Specialized United Nations bodies	28,610.64	281.27	NE	NE					
1. United Nations Development Programme	27,559.68	270.94	NE	NE	Provided	Other (ODA, OOF)	Grant	Cross-cutting	
2. United Nations Environment Programme	697.25	6.85	NE	NE					
	697.25	6.85	NE	NE	Provided	Other (ODA, OOF)	Grant	Cross-cutting	
3. Other	353.71	3.48	NE	NE					
United Nations Framework Convention on Climate Change	337.87	3.32	NE	NE	Provided	OOF	Grant	Cross-cutting	
Intergovernmental Panel on Climate Change	15.84	0.16	NE	NE	Provided	OOF	Grant	Cross-cutting	

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

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

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

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

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

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

<sup>f</sup> Please specify.

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

**Custom Footnotes**

The unit of JPY is "million Yen". The unit of USD is "million dollars"

The exchange rate is 101.72 JPY/USD. Values converted from Japanese Yen to USD using the 101.72 yen/US dollar rate may not match the total USD amount reported due to rounding.

It is difficult to quantitatively specify the amount of contributions for climate-specific purpose because judgment as to whether the funds provided to each institutions are used for climate change related sectors or not depends on each institution. Therefore, the amount of contribution for "Climate-specific" are reported as "NE".

1. World bank in the tale means International Bank for Reconstruction and Development (IBRD).

Provision of public financial support: contribution through multilateral channels in 2014<sup>a</sup>

Donor funding	Total amount				Status <sup>b</sup>	Funding source <sup>f</sup>	Financial instrument <sup>f</sup>	Type of support <sup>f, g</sup>	Sector <sup>c</sup>
	Core/general <sup>d</sup>		Climate-specific <sup>e</sup>						
	Japanese yen - JPY	USD	Japanese yen - JPY	USD					
Total contributions through multilateral channels	260,388.71	2,559.83	NE	NE					
Multilateral climate change funds <sup>g</sup>	17,488.14	171.91	NE	NE					
1. Global Environment Facility	15,000.00	147.46	NE	NE	Provided	ODA	Grant	Cross-cutting	
2. Least Developed Countries Fund									
3. Special Climate Change Fund									
4. Adaptation Fund									
5. Green Climate Fund									
6. UNFCCC Trust Fund for Supplementary Activities	93.65	0.92	NE	NE	Provided	Other (ODA, OOF)	Grant	Cross-cutting	
7. Other multilateral climate change funds	2,394.49	23.53	NE	NE					
(1) The Multilateral Fund for the Implementation of the Montreal Protocol	2,067.33	20.32	NE	NE	Provided	ODA	Grant	Mitigation	
(2) Vienna Convention and the Montreal Protocol	52.11	0.51	NE	NE	Provided	ODA	Grant	Mitigation	
(3) Asia Pacific Adaptation Network (APAN) and Global Adaptation Network (GAN)	33.95	0.33	NE	NE	Provided	ODA	Grant	Adaptation	
(4) Asia-Pacific Network for Global Change Research (APN)	241.10	2.37	NE	NE	Provided	ODA	Grant	Cross-cutting	
Multilateral financial institutions, including regional development banks	211,139.97	2,075.69	NE	NE					
1. World Bank	13,467.80	132.40	NE	NE	Provided	ODA	Grant	Cross-cutting	
2. International Finance Corporation	688.80	6.77	NE	NE	Provided	ODA	Grant	Cross-cutting	
3. African Development Bank	825.90	8.12	NE	NE	Provided	ODA	Grant	Cross-cutting	
4. Asian Development Bank	7,337.03	72.13	NE	NE	Provided	ODA	Grant	Cross-cutting	
5. European Bank for Reconstruction and Development	125.11	1.23	NE	NE	Provided	ODA	Grant	Cross-cutting	
6. Inter-American Development Bank	724.72	7.12	NE	NE	Provided	ODA	Grant	Cross-cutting	
7. Other	187,970.61	1,847.92	NE	NE					
(1) International Development Association	110,999.05	1,091.22	NE	NE	Provided	ODA	Equity	Cross-cutting	
(2) African Development Fund	18,574.38	182.60	NE	NE	Provided	ODA	Equity	Cross-cutting	
(3) Asian Development Fund	39,269.74	386.06	NE	NE	Provided	ODA	Grant	Cross-cutting	
(4) Fund for Special Operations (IDB)	698.89	6.87	NE	NE	Provided	ODA	Grant	Cross-cutting	
(5) African Development Bank	2,071.92	20.37	NE	NE	Provided	ODA	Equity	Cross-cutting	
(6) Asian Development Bank	3,067.80	30.16	NE	NE	Provided	ODA	Equity	Cross-cutting	
(7) Inter-American Development Bank	11,012.54	108.26	NE	NE	Provided	ODA	Equity	Cross-cutting	
(8) Inter-American Investment Corporation	2,276.29	22.38	NE	NE	Provided	ODA	Equity	Cross-cutting	
Specialized United Nations bodies	31,760.60	312.23	NE	NE					
1. United Nations Development Programme	30,280.79	297.69	NE	NE					
	30,280.79	297.69	NE	NE	Provided	Other (ODA, OOF)	Grant	Cross-cutting	
2. United Nations Environment Programme	1,033.93	10.16	NE	NE					
	1,033.93	10.16	NE	NE	Provided	Other (ODA, OOF)	Grant	Cross-cutting	
3. Other	445.88	4.38	NE	NE					
United Nations Framework Convention on Climate Change	427.16	4.20	NE	NE	Provided	OOF	Grant	Cross-cutting	
Intergovernmental Panel on Climate Change	18.72	0.18	NE	NE	Provided	OOF	Grant	Cross-cutting	

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

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

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

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

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

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

<sup>f</sup> Please specify.

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

## Custom Footnotes

The unit of JPY is "million Yen". The unit of USD is "million dollars"

The exchange rate is 101.72 JPY/USD. Values converted from Japanese Yen to USD using the 101.72 yen/US dollar rate may not match the total USD amount reported due to rounding.

It is difficult to quantitatively specify the amount of contributions for climate-specific purpose because judgment as to whether the funds provided to each institutions are used for climate change related sectors or not depends on each institution. Therefore, the amount of contribution for "Climate-specific" are reported as "NE".

1. World bank in the tale means International Bank for Reconstruction and Development (IBRD).

Table 7(b)

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**Provision of public financial support: contribution through bilateral, regional and other channels in 2013<sup>a</sup>**

Recipient country/ region/project/programme <sup>b</sup>	Total amount		Status <sup>c</sup>	Funding source <sup>g</sup>	Financial instrument <sup>g</sup>	Type of support <sup>g, h</sup>	Sector <sup>d</sup>	Additional information <sup>e</sup>
	Climate-specific <sup>f</sup>							
	Japanese yen - JPY	USD						
Total contributions through bilateral, regional and other channels	821,140.00	8,072.52						
Afghanistan /	295.00	2.90	Provided	ODA	Grant	Adaptation	Other (Prevention and restoration of disaster)	
Argentina /	126.00	1.24	Provided	ODA	Grant	Mitigation	Other (Air pollution), Energy	
Asia, Oceania /	112.00	1.10	Committed	OOF	Grant	Adaptation	Cross-cutting	
Asia /	470.00	4.62	Committed	Other (ODA, OOF)	Grant	Mitigation	Cross-cutting	
Azerbaijan /	777.00	7.64	Committed	ODA	Grant	Adaptation	Agriculture	
Bangladesh /	63,441.00	623.68	Committed	Other (ODA, OOF)	Other (Grant, Concessional Loan)	Mitigation	Energy, Cross-cutting, Water and sanitation	
Bangladesh /	28,968.00	284.78	Committed	Other (ODA, OOF)	Other (Grant, Concessional Loan)	Adaptation	Other (Prevention and restoration of disaster), Agriculture	
Bhutan /	1,373.00	13.50	Committed	ODA	Grant	Adaptation	Agriculture, Other (Prevention and restoration of disaster)	
Bolivia /	38.00	0.37	Provided	ODA	Grant	Adaptation	Agriculture	
Botswana /	271.00	2.66	Provided	ODA	Grant	Cross- cutting	Forestry	
Brazil /	349.00	3.43	Provided	ODA	Grant	Adaptation	Other (Prevention and restoration of disaster)	

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**Provision of public financial support: contribution through bilateral, regional and other channels in 2013<sup>a</sup>**

Recipient country/ region/project/programme <sup>b</sup>	Total amount		Status <sup>c</sup>	Funding source <sup>g</sup>	Financial instrument <sup>g</sup>	Type of support <sup>g, h</sup>	Sector <sup>d</sup>	Additional information <sup>e</sup>
	Climate-specific <sup>f</sup>							
	Japanese yen - JPY	USD						
Burkina Faso /	968.00	9.52	Committed	ODA	Grant	Adaptation	Water and sanitation	
Cabo Verde /	15,292.00	150.33	Committed	ODA	Concessional Loan	Adaptation	Water and sanitation	
Cambodia /	1,216.00	11.95	Committed	Other (ODA, OOF)	Grant	Mitigation	Energy, Cross-cutting	
Cambodia /	21.00	0.21	Committed	ODA	Grant	Adaptation	Other (Prevention and restoration of disaster)	
China /	1,997.00	19.63	Committed	Other (ODA, OOF)	Other (Grant, Non- Concessional Loan)	Mitigation	Other (Air pollution), Cross-cutting	
Colombia /	5,880.00	57.81	Committed	OOF	Non-Concessional Loan	Mitigation	Energy	
Costa Rica /	56,086.00	551.38	Committed	ODA	Concessional Loan	Mitigation	Energy	
Costa Rica /	244.00	2.40	Provided	ODA	Grant	Cross- cutting	Forestry	
Côte d'Ivoire /	183.00	1.80	Committed	ODA	Grant	Mitigation	Forestry	
Côte d'Ivoire /	17.00	0.17	Committed	ODA	Grant	Cross- cutting	Forestry	
Cuba /	276.00	2.71	Provided	ODA	Grant	Adaptation	Water and sanitation	
Developing countries and others /	4,900.00	48.17	Committed	OOF	Non-Concessional Loan	Mitigation	Cross-cutting	

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**Provision of public financial support: contribution through bilateral, regional and other channels in 2013<sup>a</sup>**

Recipient country/ region/project/programme <sup>b</sup>	Total amount		Status <sup>c</sup>	Funding source <sup>g</sup>	Financial instrument <sup>g</sup>	Type of support <sup>g, h</sup>	Sector <sup>d</sup>	Additional information <sup>e</sup>
	Climate-specific <sup>f</sup>							
	Japanese yen - JPY	USD						
Developing countries /	225.00	2.21	Committed	OOF	Grant	Cross-cutting	Other (Others)	
Djibouti, Rwanda /	28.00	0.28	Committed	OOF	Grant	Mitigation	Energy	
Ecuador /	389.00	3.82	Provided	ODA	Grant	Adaptation	Agriculture	
Ethiopia /	223.00	2.19	Provided	ODA	Grant	Mitigation	Energy	
Ethiopia /	1,205.00	11.85	Committed	ODA	Grant	Adaptation	Water and sanitation	
Ethiopia /	244.00	2.40	Provided	ODA	Grant	Cross-cutting	Forestry	
Fiji /	134.00	1.32	Provided	ODA	Grant	Mitigation	Energy	
Ghana /	1,686.00	16.57	Committed	ODA	Grant	Mitigation	Energy	
Ghana /	6.00	0.06	Committed	OOF	Grant	Adaptation	Water and sanitation	
Honduras /	952.00	9.36	Committed	ODA	Grant	Mitigation	Energy	
Honduras /	106.00	1.04	Provided	ODA	Grant	Cross-cutting	Forestry	
India /	264,681.00	2,602.05	Committed	Other (ODA, OOF)	Other (Grant, Concessional Loan, Non-Concessional Loan)	Mitigation	Energy	
India /	60.00	0.59	Committed	ODA	Grant	Adaptation	Other (Prevention and restoration of disaster)	
Indonesia, Myanmar /	21.00	0.21	Provided	ODA	Grant	Mitigation	Energy	

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**Provision of public financial support: contribution through bilateral, regional and other channels in 2013<sup>a</sup>**

<i>Recipient country/ region/project/programme<sup>b</sup></i>	<i>Total amount</i>		<i>Status<sup>c</sup></i>	<i>Funding source<sup>g</sup></i>	<i>Financial instrument<sup>g</sup></i>	<i>Type of support<sup>g, h</sup></i>	<i>Sector<sup>d</sup></i>	<i>Additional information<sup>e</sup></i>
	<i>Climate-specific<sup>f</sup></i>							
	<i>Japanese yen - JPY</i>	<i>USD</i>						
Indonesia /	4,984.00	49.00	Committed	Other (ODA, OOF)	Grant	Mitigation	Energy, Water and sanitation, Cross- cutting, Forestry	
Indonesia /	529.00	5.20	Committed	ODA	Grant	Cross- cutting	Other (Prevention and restoration of disaster), Water and sanitation, Forestry	
Iraq /	5.00	0.05	Provided	ODA	Grant	Mitigation	Water and sanitation	
Kenya, Ethiopia /	40.00	0.39	Committed	OOF	Grant	Mitigation	Energy	
Kenya /	518.00	5.09	Committed	Other (ODA, OOF)	Grant	Mitigation	Energy, Other (Others)	
Kenya /	2,687.00	26.42	Committed	ODA	Grant	Adaptation	Water and sanitation, Other (Prevention and restoration of disaster)	

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**Provision of public financial support: contribution through bilateral, regional and other channels in 2013<sup>a</sup>**

<i>Recipient country/ region/project/programme<sup>b</sup></i>	<i>Total amount</i>		<i>Status<sup>c</sup></i>	<i>Funding source<sup>g</sup></i>	<i>Financial instrument<sup>g</sup></i>	<i>Type of support<sup>g, h</sup></i>	<i>Sector<sup>d</sup></i>	<i>Additional information<sup>e</sup></i>
	<i>Climate-specific<sup>f</sup></i>							
	<i>Japanese yen - JPY</i>	<i>USD</i>						
Kyrgyzstan /	100.00	0.98	Provided	ODA	Grant	Adaptation	Other (Prevention and restoration of disaster)	
Kuwait /	63,239.00	621.70	Committed	OOF	Non-Concessional Loan	Mitigation	Energy, Other (Air pollution)	
Lao People's Democratic Republic /	1,889.00	18.57	Committed	Other (ODA, OOF)	Grant	Mitigation	Energy	
Lao People's Democratic Republic /	115.00	1.13	Provided	ODA	Grant	Cross-cutting	Forestry	
Latin America, Africa /	350.00	3.44	Provided	ODA	Grant	Mitigation	Cross-cutting	
Malawi /	257.00	2.53	Provided	ODA	Grant	Cross-cutting	Forestry	
Malaysia /	4,767.00	46.86	Committed	OOF	Other (Grant, Non-Concessional Loan)	Mitigation	Energy, Water and sanitation, Cross-cutting, Forestry	
Malaysia /	105.00	1.03	Provided	ODA	Grant	Cross-cutting	Forestry	
Mauritius /	2,229.00	21.91	Committed	ODA	Grant	Adaptation	Other (Prevention and restoration of disaster)	

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**Provision of public financial support: contribution through bilateral, regional and other channels in 2013<sup>a</sup>**

Recipient country/ region/project/programme <sup>b</sup>	Total amount		Status <sup>c</sup>	Funding source <sup>g</sup>	Financial instrument <sup>g</sup>	Type of support <sup>g, h</sup>	Sector <sup>d</sup>	Additional information <sup>e</sup>
	Climate-specific <sup>f</sup>							
	Japanese yen - JPY	USD						
Mexico /	3,946.00	38.79	Committed	OOF	Other (Grant, Non-Concessional Loan)	Mitigation	Energy, Other (Others)	
Moldova /	1,154.00	11.34	Committed	ODA	Grant	Mitigation	Energy	
Mongolia /	1,394.00	13.70	Committed	Other (ODA, OOF)	Grant	Mitigation	Cross-cutting, Energy, Other (Air pollution)	
Mozambique /	298.00	2.93	Provided	ODA	Grant	Mitigation	Water and sanitation	
Mozambique /	574.00	5.64	Provided	ODA	Grant	Adaptation	Water and sanitation	
Mozambique /	350.00	3.44	Provided	ODA	Grant	Cross-cutting	Forestry	
Myanmar /	14,119.00	138.80	Committed	Other (ODA, OOF)	Other (Grant, Concessional Loan)	Mitigation	Energy	
Myanmar /	4,667.00	45.88	Committed	ODA	Grant	Adaptation	Other (Prevention and restoration of disaster), Agriculture	
Nauru /	100.00	0.98	Committed	ODA	Grant	Adaptation	Water and sanitation	
Nepal /	74.00	0.73	Provided	ODA	Grant	Mitigation	Energy	
Nepal /	21.00	0.21	Committed	ODA	Grant	Adaptation	Agriculture	

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**Provision of public financial support: contribution through bilateral, regional and other channels in 2013<sup>a</sup>**

Recipient country/ region/project/programme <sup>b</sup>	Total amount		Status <sup>c</sup>	Funding source <sup>g</sup>	Financial instrument <sup>g</sup>	Type of support <sup>g, h</sup>	Sector <sup>d</sup>	Additional information <sup>e</sup>
	Climate-specific <sup>f</sup>							
	Japanese yen - JPY	USD						
Nicaragua /	1,496.00	14.71	Committed	ODA	Concessional Loan	Mitigation	Energy	
Nicaragua /	7.00	0.07	Provided	ODA	Grant	Adaptation	Water and sanitation	
Pakistan /	4.00	0.04	Provided	ODA	Grant	Adaptation	Other (Prevention and restoration of disaster)	
Palau, Samoa, Fiji, Tonga, Vanuatu, Kiribati, Tuvalu /	30.00	0.29	Committed	OOF	Grant	Mitigation	Energy	
Palau /	189.00	1.86	Provided	ODA	Grant	Adaptation	Cross-cutting	
Palestinian Authority /	63.00	0.62	Committed	ODA	Grant	Adaptation	Agriculture	
Papua New Guinea /	8,340.00	81.99	Committed	ODA	Concessional Loan	Mitigation	Energy	
Paraguay /	131.00	1.29	Provided	ODA	Grant	Cross-cutting	Cross-cutting	
Philippines /	44,292.00	435.43	Committed	ODA	Other (Grant, Concessional Loan)	Mitigation	Other (Air pollution), Energy	
Philippines /	50,329.00	494.78	Committed	ODA	Other (Grant, Concessional Loan)	Adaptation	Agriculture, Other (Prevention and restoration of disaster)	
Philippines /	281.00	2.76	Provided	ODA	Grant	Cross-cutting	Other (Others)	
Rwanda /	43.00	0.42	Provided	ODA	Grant	Adaptation	Agriculture	

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**Provision of public financial support: contribution through bilateral, regional and other channels in 2013<sup>a</sup>**

Recipient country/ region/project/programme <sup>b</sup>	Total amount		Status <sup>c</sup>	Funding source <sup>g</sup>	Financial instrument <sup>g</sup>	Type of support <sup>g, h</sup>	Sector <sup>d</sup>	Additional information <sup>e</sup>
	Climate-specific <sup>f</sup>							
	Japanese yen - JPY	USD						
Sierra Leone /	1,552.00	15.26	Committed	ODA	Grant	Mitigation	Energy	
Singapore /	5.00	0.05	Provided	ODA	Grant	Mitigation	Other (Others)	
Singapore /	5.00	0.05	Provided	ODA	Grant	Cross-cutting	Other (Others)	
South Africa /	2,940.00	28.90	Committed	OOF	Non-Concessional Loan	Mitigation	Energy	
South Africa /	15.00	0.15	Committed	Other (ODA, OOF)	Grant	Adaptation	Agriculture, Other (Prevention and restoration of disaster)	
Sri Lanka /	15,962.00	156.92	Committed	ODA	Other (Grant, Concessional Loan)	Mitigation	Energy	
Sri Lanka /	1.00	0.01	Provided	ODA	Grant	Adaptation	Agriculture	
Swaziland /	92.00	0.90	Committed	ODA	Grant	Adaptation	Other (Prevention and restoration of disaster)	
Tanzania /	5,319.00	52.29	Committed	Other (ODA, OOF)	Other (Grant, Concessional Loan)	Adaptation	Water and sanitation, Agriculture	
Thailand, Indonesia, Malaysia /	20.00	0.20	Committed	OOF	Grant	Mitigation	Energy	

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**Provision of public financial support: contribution through bilateral, regional and other channels in 2013<sup>a</sup>**

<i>Recipient country/ region/project/programme<sup>b</sup></i>	<i>Total amount</i>		<i>Status<sup>c</sup></i>	<i>Funding source<sup>g</sup></i>	<i>Financial instrument<sup>g</sup></i>	<i>Type of support<sup>g, h</sup></i>	<i>Sector<sup>d</sup></i>	<i>Additional information<sup>e</sup></i>
	<i>Climate-specific<sup>f</sup></i>							
	<i>Japanese yen - JPY</i>	<i>USD</i>						
Thailand, Cambodia, Lao People's Democratic Republic, Viet Nam, Indonesia /	35.00	0.34	Committed	OOF	Grant	Mitigation	Energy	
Thailand /	18,405.00	180.94	Committed	Other (ODA, OOF)	Other (Grant, Non-Concessional Loan)	Mitigation	Energy, Other (Air pollution)	
Thailand /	320.00	3.15	Provided	ODA	Grant	Cross-cutting	Other (Others)	
Timor-Leste /	2,861.00	28.13	Committed	ODA	Grant	Adaptation	Other (Prevention and restoration of disaster), Agriculture	
Tonga /	1,573.00	15.46	Committed	ODA	Grant	Mitigation	Energy	
Turkey /	7,374.00	72.49	Committed	Other (ODA, OOF)	Other (Grant, Non-Concessional Loan)	Mitigation	Energy	
Tuvalu /	100.00	0.98	Committed	ODA	Grant	Adaptation	Water and sanitation	
Uganda /	1,204.00	11.84	Committed	ODA	Grant	Mitigation	Energy	
Uganda /	43.00	0.42	Provided	ODA	Grant	Adaptation	Agriculture	
Uzbekistan /	34,877.00	342.87	Committed	ODA	Concessional Loan	Mitigation	Energy	
Viet Nam, Malaysia, Indonesia /	40.00	0.39	Committed	OOF	Grant	Mitigation	Energy	
Viet Nam, Myanmar /	8.00	0.08	Committed	OOF	Grant	Adaptation	Water and sanitation	

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**Provision of public financial support: contribution through bilateral, regional and other channels in 2013<sup>a</sup>**

<i>Recipient country/ region/project/programme<sup>b</sup></i>	<i>Total amount</i>		<i>Status<sup>c</sup></i>	<i>Funding source<sup>g</sup></i>	<i>Financial instrument<sup>g</sup></i>	<i>Type of support<sup>g, h</sup></i>	<i>Sector<sup>d</sup></i>	<i>Additional information<sup>e</sup></i>
	<i>Climate-specific<sup>f</sup></i>							
	<i>Japanese yen - JPY</i>	<i>USD</i>						
Viet Nam, Thailand /	9.00	0.09	Committed	OOF	Grant	Adaptation	Other (Prevention and restoration of disaster)	
Viet Nam /	1,913.00	18.81	Committed	Other (ODA, OOF)	Grant	Mitigation	Energy, Other (Air pollution), Cross-cutting, Water and sanitation, Forestry, Other (Others)	
Viet Nam /	44,392.00	436.41	Committed	ODA	Other (Grant, Concessional Loan)	Adaptation	Other (Prevention and restoration of disaster), Water and sanitation, Agriculture	
Viet Nam /	15,099.00	148.44	Committed	ODA	Other (Grant, Concessional Loan)	Cross-cutting	Cross-cutting, Forestry, Other (Others)	

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

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**Provision of public financial support: contribution through bilateral, regional and other channels in 2013<sup>a</sup>**

<i>Recipient country/ region/project/programme<sup>b</sup></i>	<i>Total amount</i>		<i>Status<sup>c</sup></i>	<i>Funding source<sup>g</sup></i>	<i>Financial instrument<sup>g</sup></i>	<i>Type of support<sup>g, h</sup></i>	<i>Sector<sup>d</sup></i>	<i>Additional information<sup>e</sup></i>
	<i>Climate-specific<sup>f</sup></i>							
	<i>Japanese yen - JPY</i>	<i>USD</i>						

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

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

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

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

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

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

<sup>g</sup> Please specify.

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

**Custom Footnotes**

For the countries below, in the years 2013 and 2014, the values include projects for which the funds have been provided. 2013: Asia/ Bangladesh/Bhutan/ China/ Ethiopia (Adaptation)/ Indonesia/ Kenya (Mitigation)/ Lao People's Democratic Republic (Mitigation)/ Mongolia/ Myanmar/ Philippines (Adaptation)/ South Africa/ Sri Lanka (Mitigation)/ Thailand (Mitigation)/ Timor-Leste/ Turkey/ Viet Nam; 2014: Bangladesh/ Cambodia/ India (Mitigation)/ Indonesia (Mitigation, Cross-cutting)/ Indonesia/ Kenya (Mitigation)/ Lao People's Democratic Republic (Adaptation)/ Mongolia/Mozambique/Myanmar (Adaptation)/ Pakistan/ Philippines/ Serbia/ Sri Lanka/ Viet Nam (Mitigation)

The unit of JPY is "million Japanese Yen", and the unit of USD is "million US dollars". The exchange rate is 101.72 JPY/USD. Values converted from Japanese Yen to USD using the 101.72 yen/US dollar rate may not match the total USD amount reported due to rounding.

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**Provision of public financial support: contribution through bilateral, regional and other channels in 2014<sup>a</sup>**

Recipient country/ region/project/programme <sup>b</sup>	Total amount		Status <sup>c</sup>	Funding source <sup>g</sup>	Financial instrument <sup>g</sup>	Type of support <sup>g, h</sup>	Sector <sup>d</sup>	Additional information <sup>e</sup>
	Climate-specific <sup>f</sup>							
	Japanese yen - JPY	USD						
Total contributions through bilateral, regional and other channels	835,291.00	8,211.65						
Afghanistan /	43.00	0.42	Committed	ODA	Grant	Adaptation	Other (Prevention and restoration of disaster)	
Albania /	85.00	0.84	Provided	ODA	Grant	Mitigation	Water and sanitation	
Asia, Africa /	64.00	0.63	Provided	ODA	Grant	Mitigation	Forestry	
Asia, Oceania /	477.00	4.69	Committed	OOF	Grant	Mitigation	Energy	
Asia, Oceania /	109.00	1.07	Committed	OOF	Grant	Adaptation	Cross-cutting	
Asia, South America /	128.00	1.26	Committed	OOF	Grant	Mitigation	Forestry	
Asia /	348.00	3.42	Provided	ODA	Grant	Mitigation	Cross-cutting	
Bangladesh /	56,970.00	560.07	Committed	ODA	Other (Grant, Concessional Loan)	Mitigation	Other (Prevention and restoration of disaster), Other (Others)	
Bangladesh /	266.00	2.62	Committed	Other (ODA, OOF)	Grant	Adaptation	Other (Prevention and restoration of disaster), Water and sanitation, Agriculture	

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**Provision of public financial support: contribution through bilateral, regional and other channels in 2014<sup>a</sup>**

Recipient country/ region/project/programme <sup>b</sup>	Total amount		Status <sup>c</sup>	Funding source <sup>g</sup>	Financial instrument <sup>g</sup>	Type of support <sup>g, h</sup>	Sector <sup>d</sup>	Additional information <sup>e</sup>
	Climate-specific <sup>f</sup>							
	Japanese yen - JPY	USD						
Belize /	100.00	0.98	Committed	ODA	Grant	Adaptation	Other (Prevention and restoration of disaster)	
Bhutan /	91.00	0.89	Provided	ODA	Grant	Adaptation	Other (Prevention and restoration of disaster)	
Bolivia /	2,495.00	24.53	Committed	ODA	Concessional Loan	Mitigation	Energy	
Brazil /	14,700.00	144.51	Committed	OOF	Non- Concessional Loan	Mitigation	Energy	
Burkina Faso, Paraguay /	42.00	0.41	Provided	ODA	Grant	Mitigation	Energy, Forestry	
Cambodia /	171.00	1.68	Committed	Other (ODA, OOF)	Other (Grant, Concessional Loan)	Mitigation	Cross-cutting, Energy, Water and sanitation	
Cambodia /	5,737.00	56.40	Committed	Other (ODA, OOF)	Other (Grant, Concessional Loan)	Adaptation	Water and sanitation, Agriculture	
Cameroon /	374.00	3.68	Committed	ODA	Grant	Adaptation	Water and sanitation	
Cameroon /	26.00	0.26	Provided	ODA	Grant	Cross- cutting	Forestry	

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**Provision of public financial support: contribution through bilateral, regional and other channels in 2014<sup>a</sup>**

Recipient country/ region/project/programme <sup>b</sup>	Total amount		Status <sup>c</sup>	Funding source <sup>g</sup>	Financial instrument <sup>g</sup>	Type of support <sup>g, h</sup>	Sector <sup>d</sup>	Additional information <sup>e</sup>
	Climate-specific <sup>f</sup>							
	Japanese yen - JPY	USD						
Caribbean States /	1,526.00	15.00	Committed	ODA	Grant	Cross-cutting	Other (Others)	
Chile /	76.00	0.75	Committed	OOF	Grant	Mitigation	Energy	
China /	25.00	0.25	Provided	ODA	Grant	Mitigation	Cross-cutting	
Commonwealth of Dominica /	100.00	0.98	Committed	ODA	Grant	Adaptation	Other (Others)	
Costa Rica /	49.00	0.48	Committed	OOF	Grant	Mitigation	Energy	
Developing countries /	1,051.00	10.33	Provided	ODA	Grant	Mitigation	Energy	
Dominican Republic /	500.00	4.92	Committed	ODA	Grant	Mitigation	Energy	
Ethiopia /	70.00	0.69	Committed	OOF	Grant	Mitigation	Energy	
Ethiopia /	70.00	0.69	Provided	ODA	Grant	Cross-cutting	Forestry	
Fiji /	136.00	1.34	Provided	ODA	Grant	Adaptation		
Grenada /	484.00	4.76	Committed	ODA	Grant	Mitigation	Energy	
Grenada /	200.00	1.97	Committed	ODA	Grant	Adaptation	Other (Prevention and restoration of disaster)	
Guinea /	13.00	0.13	Provided	ODA	Grant	Adaptation	Water and sanitation	
Guyana /	300.00	2.95	Committed	ODA	Grant	Adaptation	Other (Prevention and restoration of disaster)	

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**Provision of public financial support: contribution through bilateral, regional and other channels in 2014<sup>a</sup>**

Recipient country/ region/project/programme <sup>b</sup>	Total amount		Status <sup>c</sup>	Funding source <sup>g</sup>	Financial instrument <sup>g</sup>	Type of support <sup>g, h</sup>	Sector <sup>d</sup>	Additional information <sup>e</sup>
	Climate-specific <sup>f</sup>							
	Japanese yen - JPY	USD						
India /	290,769.00	2,858.52	Committed	Other (ODA, OOF)	Other (Grant, Concessional Loan, Non- Concessional Loan)	Mitigation	Forestry, Energy, Other (Air pollution )	
India /	15,620.00	153.56	Committed	ODA	Concessional Loan	Adaptation	Water and sanitation	
Indochina countries /	85.00	0.84	Provided	ODA	Grant	Mitigation	Forestry	
Indonesia /	90,406.00	888.77	Committed	Other (ODA, OOF)	Other (Grant, Concessional Loan, Non- Concessional Loan)	Mitigation	Water and sanitation, Other (Air pollution), Energy, Cross-cutting	
Indonesia /	4,954.00	48.70	Committed	ODA	Concessional Loan	Adaptation	Other (Prevention and restoration of disaster), Agriculture	
Indonesia /	92.00	0.90	Committed	Other (ODA, OOF)	Grant	Cross- cutting	Forestry, Cross-cutting	
Iran (Islamic Republic of) /	26.00	0.26	Provided	ODA	Grant	Mitigation	Energy	
Iran (Islamic Republic of) /	42.00	0.41	Provided	ODA	Grant	Adaptation	Water and sanitation	
Iran (Islamic Republic of) /	284.00	2.79	Provided	ODA	Grant	Cross- cutting	Forestry	
Jordan /	2,238.00	22.00	Committed	ODA	Grant	Mitigation	Energy	

Table 7(b)

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**Provision of public financial support: contribution through bilateral, regional and other channels in 2014<sup>a</sup>**

Recipient country/ region/project/programme <sup>b</sup>	Total amount		Status <sup>c</sup>	Funding source <sup>g</sup>	Financial instrument <sup>g</sup>	Type of support <sup>g, h</sup>	Sector <sup>d</sup>	Additional information <sup>e</sup>
	Climate-specific <sup>f</sup>							
	Japanese yen - JPY	USD						
Kenya, Ethiopia /	30.00	0.29	Committed	OOF	Grant	Mitigation	Energy	
Kenya /	89.00	0.87	Committed	Other (ODA, OOF)	Grant	Mitigation	Energy	
Kenya /	46.00	0.45	Committed	Other (ODA, OOF)	Grant	Adaptation	Water and sanitation, Agriculture	
Lao People's Democratic Republic, Cambodia /	41.00	0.40	Provided	ODA	Grant	Adaptation	Other (Prevention and restoration of disaster)	
Lao People's Democratic Republic /	67.00	0.66	Committed	OOF	Grant	Mitigation	Energy, Cross-cutting	
Lao People's Democratic Republic /	1,388.00	13.65	Committed	ODA	Grant	Adaptation	Other (Prevention and restoration of disaster), Water and sanitation	
Lao People's Democratic Republic /	16.00	0.16	Provided	ODA	Grant	Cross- cutting	Forestry	
Latin America, Africa /	300.00	2.95	Provided	ODA	Grant	Mitigation	Cross-cutting	
Latin America /	48.00	0.47	Committed	OOF	Grant	Mitigation	Energy	
Madagascar /	206.00	2.03	Committed	ODA	Grant	Adaptation	Agriculture	
Malawi /	101.00	0.99	Committed	ODA	Grant	Mitigation	Energy	
Malaysia /	103.00	1.01	Committed	OOF	Grant	Mitigation	Energy	

Table 7(b)

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**Provision of public financial support: contribution through bilateral, regional and other channels in 2014<sup>a</sup>**

Recipient country/ region/project/programme <sup>b</sup>	Total amount		Status <sup>c</sup>	Funding source <sup>g</sup>	Financial instrument <sup>g</sup>	Type of support <sup>g, h</sup>	Sector <sup>d</sup>	Additional information <sup>e</sup>
	Climate-specific <sup>f</sup>							
	Japanese yen - JPY	USD						
Maldives /	27.00	0.27	Committed	OOF	Grant	Mitigation	Energy	
Maldives /	4.00	0.04	Committed	OOF	Grant	Adaptation	Water and sanitation	
Mauritius /	45.00	0.44	Provided	ODA	Grant	Adaptation	Cross-cutting	
Mexico /	5,012.00	49.27	Committed	OOF	Other (Grant, Non- Concessional Loan)	Mitigation	Energy	
Mongolia /	182.00	1.79	Committed	Other (ODA, OOF)	Grant	Mitigation	Energy, Other (Air pollution)	
Morocco /	90,656.00	891.23	Committed	OOF	Non- Concessional Loan	Mitigation	Other (Air pollution)	
Mozambique /	17,288.00	169.96	Committed	ODA	Other (Grant, Concessional Loan)	Mitigation	Energy	
Myanmar /	1,068.00	10.50	Committed	Other (ODA, OOF)	Grant	Mitigation	Energy	
Myanmar /	15,022.00	147.68	Committed	ODA	Other (Grant, Concessional Loan)	Adaptation	Agriculture, Other (Prevention and restoration of disaster)	
Nepal /	1,571.00	15.44	Committed	ODA	Grant	Mitigation	Energy	

Table 7(b)

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**Provision of public financial support: contribution through bilateral, regional and other channels in 2014<sup>a</sup>**

<i>Recipient country/ region/project/programme<sup>b</sup></i>	<i>Total amount</i>		<i>Status<sup>c</sup></i>	<i>Funding source<sup>g</sup></i>	<i>Financial instrument<sup>g</sup></i>	<i>Type of support<sup>g, h</sup></i>	<i>Sector<sup>d</sup></i>	<i>Additional information<sup>e</sup></i>
	<i>Climate-specific<sup>f</sup></i>							
	<i>Japanese yen - JPY</i>	<i>USD</i>						
Nicaragua /	1,521.00	14.95	Committed	ODA	Grant	Adaptation	Other (Prevention and restoration of disaster)	
North America, Latin America /	81.00	0.80	Provided	ODA	Grant	Adaptation	Other (Prevention and restoration of disaster)	
Pakistan /	5,603.00	55.08	Committed	ODA	Other (Grant, Concessional Loan)	Mitigation	Water and sanitation, Energy	
Pakistan /	3,719.00	36.56	Committed	ODA	Grant	Adaptation	Energy, Other (Prevention and restoration of disaster), Water and sanitation	
Palau, Samoa, Fiji, Tonga, Vanuatu, Kiribati, Tuvalu, Others /	47.00	0.46	Committed	OOF	Grant	Cross- cutting	Energy	
Palau /	31.00	0.30	Committed	OOF	Grant	Mitigation	Cross-cutting	
Papua New Guinea /	175.00	1.72	Provided	ODA	Grant	Adaptation	Energy	
Papua New Guinea /	173.00	1.70	Provided	ODA	Grant	Cross- cutting	Forestry	
Paraguay /	1,827.00	17.96	Committed	ODA	Grant	Adaptation	Water and sanitation	

Table 7(b)

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**Provision of public financial support: contribution through bilateral, regional and other channels in 2014<sup>a</sup>**

Recipient country/ region/project/programme <sup>b</sup>	Total amount		Status <sup>c</sup>	Funding source <sup>g</sup>	Financial instrument <sup>g</sup>	Type of support <sup>g, h</sup>	Sector <sup>d</sup>	Additional information <sup>e</sup>
	Climate-specific <sup>f</sup>							
	Japanese yen - JPY	USD						
Peru /	6,944.00	68.27	Committed	ODA	Concessional Loan	Mitigation	Energy	
Peru /	2,480.00	24.38	Committed	ODA	Concessional Loan	Adaptation	Other (Prevention and restoration of disaster)	
Philippines /	517.00	5.08	Committed	ODA	Grant	Mitigation	Energy, Water and sanitation	
Philippines /	5,930.00	58.30	Committed	ODA	Grant	Adaptation	Other (Prevention and restoration of disaster)	
Rwanda /	1,549.00	15.23	Committed	ODA	Grant	Adaptation	Cross-cutting, Agriculture	
Saint Lucia /	560.00	5.51	Committed	ODA	Grant	Mitigation	Energy	
Saint Lucia /	100.00	0.98	Committed	ODA	Grant	Adaptation	Other (Others)	
Saint Vincent and the Grenadines /	486.00	4.78	Committed	ODA	Grant	Mitigation	Energy	
Saint Vincent and the Grenadines /	100.00	0.98	Committed	ODA	Grant	Adaptation	Other (Prevention and restoration of disaster)	
Saudi Arabia /	32.00	0.31	Committed	OOF	Grant	Mitigation	Energy	
Saudi Arabia /	25.00	0.25	Provided	ODA	Grant	Mitigation	Water and sanitation	

Table 7(b)

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**Provision of public financial support: contribution through bilateral, regional and other channels in 2014<sup>a</sup>**

Recipient country/ region/project/programme <sup>b</sup>	Total amount		Status <sup>c</sup>	Funding source <sup>g</sup>	Financial instrument <sup>g</sup>	Type of support <sup>g, h</sup>	Sector <sup>d</sup>	Additional information <sup>e</sup>
	Climate-specific <sup>f</sup>							
	Japanese yen - JPY	USD						
Senegal /	108.00	1.06	Provided	ODA	Grant	Adaptation	Agriculture	
Senegal /	2.00	0.02	Provided	ODA	Grant	Cross-cutting	Other (Others)	
Serbia /	572.00	5.62	Committed	ODA	Grant	Mitigation	Energy	
Seychelles /	9.00	0.09	Provided	ODA	Grant	Mitigation	Energy	
Sri Lanka /	94.00	0.92	Committed	ODA	Grant	Adaptation	Other (Prevention and restoration of disaster)	
Tajikistan /	1,628.00	16.00	Committed	ODA	Grant	Adaptation	Water and sanitation	
Tanzania /	4,410.00	43.35	Committed	ODA	Grant	Mitigation	Energy	
Thailand /	200.00	1.97	Committed	OOF	Grant	Mitigation	Energy	
Thailand /	4.00	0.04	Committed	OOF	Grant	Adaptation	Other (Prevention and restoration of disaster)	
Tonga /	200.00	1.97	Committed	ODA	Grant	Adaptation	Other (Prevention and restoration of disaster)	
Tunisia /	38,075.00	374.31	Committed	ODA	Concessional Loan	Mitigation	Energy	

Table 7(b)

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**Provision of public financial support: contribution through bilateral, regional and other channels in 2014<sup>a</sup>**

Recipient country/ region/project/programme <sup>b</sup>	Total amount		Status <sup>c</sup>	Funding source <sup>g</sup>	Financial instrument <sup>g</sup>	Type of support <sup>g, h</sup>	Sector <sup>d</sup>	Additional information <sup>e</sup>
	Climate-specific <sup>f</sup>							
	Japanese yen - JPY	USD						
Tunisia /	10,398.00	102.22	Committed	ODA	Concessional Loan	Adaptation	Other (Prevention and restoration of disaster)	
Turkey /	1,637.00	16.09	Committed	OOF	Non- Concessional Loan	Mitigation	Energy	
Uganda /	2,519.00	24.76	Committed	ODA	Grant	Mitigation	Energy	
Uganda /	156.00	1.53	Provided	ODA	Grant	Adaptation	Agriculture	
Uzbekistan /	86,839.00	853.71	Committed	ODA	Concessional Loan	Mitigation	Energy	
Viet Nam /	21,009.00	206.54	Committed	Other (ODA, OOF)	Other (Grant, Non- Concessional Loan)	Mitigation	Cross-cutting, Other (Air pollution), Energy	
Viet Nam /	21.00	0.21	Committed	ODA	Grant	Adaptation	Other (Prevention and restoration of disaster)	
Viet Nam /	10,000.00	98.31	Committed	ODA	Concessional Loan	Cross- cutting	Cross-cutting	
Zambia /	858.00	8.43	Committed	ODA	Grant	Adaptation	Water and sanitation	

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

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

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

**Provision of public financial support: contribution through bilateral, regional and other channels in 2014<sup>a</sup>**

Recipient country/ region/project/programme <sup>b</sup>	Total amount		Status <sup>c</sup>	Funding source <sup>g</sup>	Financial instrument <sup>g</sup>	Type of support <sup>g, h</sup>	Sector <sup>d</sup>	Additional information <sup>e</sup>
	Climate-specific <sup>f</sup>							
	Japanese yen - JPY	USD						

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

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

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

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

<sup>g</sup> Please specify.

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

**Custom Footnotes**

For the countries below, in the years 2013 and 2014, the values include projects for which the funds have been provided. 2013: Asia/ Bangladesh/Bhutan/ China/ Ethiopia(Adaptation)/ Indonesia/ Kenya (Mitigation)/ Lao People's Democratic Republic(Mitigation)/ Mongolia/ Myanmar/ Philippines(Adaptation)/ South Africa/ Sri Lanka (Mitigation)/ Thailand (Mitigation)/Timor-Leste/ Turkey/ Viet Nam&nbsp;2014: Bangladesh/ Cambodia/India (Mitigation)/ Indonesia (Mitigation, Cross-cutting)/ Indonesia/ Kenya(Mitigation)/ Lao People's Democratic Republic (Adaptation)/ Mongolia/Mozambique/Myanmar (Adaptation)/ Pakistan/ Philippines/ Serbia/ Sri Lanka/ Viet Nam (Mitigation)

The unit of JPY is "million Japanese Yen", and the unit of USD is "million US dollars". The exchange rate is 101.72 JPY/USD. Values converted from Japanese Yen to USD using the 101.72 yen/US dollar rate may not match the total USD amount reported due to rounding.

Table 8

**Provision of technology development and transfer support<sup>a,b</sup>**

<i>Recipient country and/or region</i>	<i>Targeted area</i>	<i>Measures and activities related to technology transfer</i>	<i>Sector<sup>c</sup></i>	<i>Source of the funding for technology transfer</i>	<i>Activities undertaken by</i>	<i>Status</i>	<i>Additional information<sup>d</sup></i>
Asia/Africa	Mitigation and Adaptation	Project for promoting sustainable forest management in developing countries	Other (Forestry)	Public	Private	Planned	Developing business models to incentivize forest conservation which will promote sustainable forest management and reducing emissions from deforestation and forest degradation.
Burkina Faso, Paraguay	Mitigation	Project to Survey Global Environmental Issues on International Agriculture and Rural Areas	Energy, Other (Forestry)	Public	Private	Planned	MAFF supports to establish agricultural and rural development methods for contributing to reduce greenhouse gas by introducing renewable energy and circulation type agriculture, and so on.
China	Mitigation	Japan-China Co-benefits Cooperation	Energy	Public	Public	Implemented	on-going
Global	Mitigation	Demonstration Project of technologies and systems for International Energy Efficiency	Energy	Private and Public	Private and Public	Implemented	Demonstrate Japanese technologies which promote Energy Efficiency, Renewable Energy and Smart Community in order to assure the effectiveness of advanced technologies in diverse conditions and infrastructures of each country.
Guyana	Mitigation	Strengthening the performance of the wood processing sector in Guyana, through building local capacity and the enhancing national systems that promote forest products trade and sustainable utilization of forest resources (Guyana)	Other (Forestry)	Public	Public	Planned	To increase the competitiveness of the wood processing sector in Guyana, the project trains stakeholders in the wood processing sector, prepare a draft for a national system for inspection and certification of solid wood for domestic and foreign markets, and conducts awareness campaigns for solid wood users.
Indonesia	Mitigation	Japan-Indonesia Co-benefits Cooperation	Agriculture	Public	Public	Implemented	on-going
Indonesia	Mitigation	Co-benefits Type Air conditioning Solar Thermal Energy	Energy	Public	Public	Implemented	on-going
Indonesia	Mitigation	Initiating The Conservation Of Cempaka Tree Species (Elmerrillia spp.) Though Plantation Development With Local Community Participation In North Sulawesi, Indonesia (Indonesia)	Other (Forestry)	Public	Public	Planned	While the demand for cempaka wood is increasing, the supply from natural forest is declining. Cempaka tree species grows naturally only in the North Sulawesi area. To prevent destructive logging of the natural forest, the PD promotes artificial reforestation with the involvement of local communities. This PD contributes to the conservation of cempaka tree species by establishing reforestation technology.

Table 8

**Provision of technology development and transfer support<sup>a,b</sup>**

<i>Recipient country and/or region</i>	<i>Targeted area</i>	<i>Measures and activities related to technology transfer</i>	<i>Sector<sup>c</sup></i>	<i>Source of the funding for technology transfer</i>	<i>Activities undertaken by</i>	<i>Status</i>	<i>Additional information<sup>d</sup></i>
Lao People's Democratic Republic, Cambodia	Adaptation	Project to Survey Global Environmental Issues on International Agriculture and Rural Areas	Other (Prevention and restoration of disaster)	Public	Private	Planned	MAFF supports to develop disaster prevention method adapting to climate change and to formulate rural prevention disaster plans in rural areas of developing country.
Malaysia	Mitigation	Capacity building on reduced impact logging(RIL) in dry inland forest in the permanent forest of peninsular Malaysia	Other (Forestry)	Public	Public	Planned	Though "Reduced Impact Logging (RIL) has attracted attention as an important component of sustainable forest management, it is not common or well understood at the sites. For this reason, the project is training forest workers for further understanding of knowledge and technology of RIL and its practice.
Mongolia	Mitigation	Study on Co-benefits type pollution control for Heat Only Boiler	Energy	Public	Public	Implemented	on-going
Myanmar	Adaptation	Community Life Environment Improvement Project utilizing communication System in the Ayeyarwady River delta in Southern Myanmar	Other (Communication)	Public	Private and Public	Implemented	Provides emergency communication systems to villeges frequently affected by natural disasters around the Ayeyarwady river delta in Southern Myanmar.
Myanmar	Adaptation	Community Life Environment Improvement Project utilizing communication System in the Ayeyarwady River delta in Southern Myanmar(Phase 2)	Other (Communication)	Public	Private and Public	Implemented	Provides emergency communication systems to villeges frequently affected by natural disasters around the Ayeyarwady river delta in Southern Myanmar.
Myanmar	Adaptation	The Project for Establishment of Disastrous Weather Monitoring System	Other (Prevention and restoration of disaster)	Public	Private	Implemented	Improves Myanmar's weather monitoring capacity by installation of the weather radar systems in Yangon, Kyaukpyu and Mandalay as well as automatic weather stations (AWS) at 30 locations throughout the country and others.
Myanmar	Adaptation	The Project for Establishment of Disastrous Weather Monitoring System(PhaseII)	Other (Prevention and restoration of disaster)	Public	Private	Implemented	Improves Myanmar's weather monitoring capacity to take measures against weather disasters such as heavy rain and cyclone and reduce damage of weather disasters by providing necessary funds to complete maintenance of automatic weather stations and others.

Table 8

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**Provision of technology development and transfer support<sup>a,b</sup>**

<i>Recipient country and/or region</i>	<i>Targeted area</i>	<i>Measures and activities related to technology transfer</i>	<i>Sector<sup>c</sup></i>	<i>Source of the funding for technology transfer</i>	<i>Activities undertaken by</i>	<i>Status</i>	<i>Additional information<sup>d</sup></i>
Panama	Mitigation	Tropical Forest Governance in the Region of Darien, Panama (Panama)	Other (Forestry)	Public	Private	Planned	The purpose of the project is to support the implementation of strategies for measures against illegal logging in Darien area. The project establishes a system for implementing measures against illegal logging, establish effective monitoring methods of wood, and propose a financial mechanism for SFM.
Peru	Mitigation	Guideline for the management of Tara(Caesalpinea spinosa) plantations with a view to the rehabilitation of waste lands in the sub-humid tropics of the coastal region of Peru	Other (Forestry)	Public	Private	Planned	The southern coastal region of Peru is semi-arid and poor in water resources. A past project confirmed that a timber species "Tara" is effective for plantation in wastelands. For this reason, this project develops guidelines for SFM and agroforestry system in Tara plantation and a technological manual for reforestation.
Rwanda	Adaptation	The Project for Development of Irrigation Scheme in Ngoma District	Agriculture	Public	Private	Implemented	Contributes to the stabilization and improvement of agricultural productivity and enables irrigated agriculture for subject areas, by constructing reservoir and irrigation facilities suitable for hill-side irrigation, procuring equipments, implementing technical assistance, and readjusting the land of existing paddy field.
Sri Lanka, Myanmar	Adaptation	Project to Study on Maintenance/Conservation Measures of Irrigation/Drainage System in Coastal and Estuary Areas	Agriculture	Public	Public	Implemented	MAFF supports to provide technical support relating to collecting materials on the field of water management, facilities and equipment in coastal areas of Asian countries and analyzing/organizing damage and problems caused by abnormal weather brought by climate change.
Tajikistan	Adaptation	The Project for Rehabilitation of Drinking Water Supply Systems in Pyanj District, Khatlon Region	Water and sanitation	Public	Private	Implemented	Supports for repairing, building and expanding village water infrastructure and others in Pyanj District, Khatlon Region, where many local residents still do not have access to safe water.

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

Provision of capacity-building support<sup>a</sup>

<i>Recipient country/region</i>	<i>Targeted area</i>	<i>Programme or project title</i>	<i>Description of programme or project</i> <sup>b,c</sup>
Asia/Pacific	Mitigation	The 13th Workshop on Greenhouse Gas Inventories in Asia (WGIA13)	WGIA has been held organized by the Ministry of the Environment of Japan, National Institute for Environmental Studies and host countries' governments since 2003 for the purpose of the quality improvement of Greenhouse gas inventories in Asian countries and promotion of regional cooperation.
Asia/Pacific	Mitigation	Low Carbon Asia Research Network	Supports the International Research Network for Low Carbon Societies in Asia to develop capacity of researchers and others for building low carbon societies.
Asia/Pacific	Adaptation	Workshop for countries of the Asia-Pacific region: Advancing National Adaptation Planning in Asia-Pacific Aligning national, local, and sectoral initiatives for maximum impacts	In order to promote the national adaptation planning process and the implementation of adaptation actions in the Asia-Pacific region, Ministry of the Environment, Japan develops ten case studies and organizes workshops in Pattaya, Thailand, inviting countries and experts from the region to share the experience and lessons for deeper understandings of each other.
Asia/Pacific	Adaptation	The Global Adaptation Network(GAN),the Asia-Pacific Adaptation Network(APAN)	Supports GAN and APAN, proposed by UNEP, to enhance capacity of policy-makers and practitioners in the Asia-Pacific region and the world by sharing knowledge on climate change adaptation.
Asia/Pacific	Multiple Areas	Asia-Pacific Seminar on Climate Change	Every year since 1991, the Ministry of the Environment, Japan has been convening the Asia-Pacific Seminar on Climate Change which has served as an important vehicle for countries in the region to exchange views and information on their respective efforts to mitigate and adapt to climate change in a practical manner, thereby contributing to capacity and confidence building among them.
Asia/Pacific	Multiple Areas	Asia-Pacific joint research /observation work of the Global Environment	Supports the Asia-Pacific Network for Global Change Research (APN) which is an intergovernmental network in the Asia-Pacific region to foster global change research, increase developing country participation in that research, and strengthen interactions between the science community and policy-makers.
Asia/Pacific	Multiple Areas	Community Based Restoration and Sustainable Management of Vulnerable of the Rewa Delta, Viti Levu	Conversion of coastal and mangrove wetlands to agricultural lands and agricultural development are causing the reduction and degradation of forests. This project sets the model area for restoring mangrove ecosystems by implementing dissemination and awareness raising of community, project on mangrove ecosystem restoration, formulation of guideline for conservation and others. The project is implemented by the department of forestry, Ministry of Fisheries and Forests in cooperation with international NGO and universities. It contributes to climate change measures and biodiversity conservation.
Bangladesh	Mitigation	Project for Updating Dakar Urbanization Master Plan by the Horizon 2025	This project contributes to air pollution control and climate change mitigation by revising the Strategic Transport Plan (STP) in Dakar Metropolitan Area (DMA) to clarify policy objectives for improvement of traffic congestion and environmental deterioration.
Bangladesh	Adaptation	Community based Cyclone Disaster Preparedness project	This project develops local staff with specializing in disaster reduction to aim to realize resilient community in the southwest of Bangladesh where is vulnerable to Cyclones. The local staff is expected to contribute to the community by such as spreading the concept of disaster reduction in the community, providing capacity building to people engaging in disaster reductions, improving infrastructure especially for cyclones and continue its services.
Bangladesh	Adaptation	Community based Cyclone Disaster Preparedness project - Phase II	This project develops local staff with specializing in disaster reduction to aim to realize resilient community in the southwest of Bangladesh where is vulnerable to Cyclones. The local staff is expected to contribute to the community by such as spreading the concept of disaster reduction in the community, providing capacity building to people engaging in disaster reductions, improving infrastructure especially for cyclones and continue its services.

**Provision of capacity-building support<sup>a</sup>**

<i>Recipient country/region</i>	<i>Targeted area</i>	<i>Programme or project title</i>	<i>Description of programme or project<sup>b,c</sup></i>
China	Multiple Areas	Japan-China Co-benefits Cooperation	The bilateral cooperation between Japan and China based on the agreement which was concluded in December 2007 and renewed in April 2011. Feasibility study for demonstration and joint research for co-benefits with controlling air pollutants and capacity building is conducted in order to contribute further strengthen environmental management in China.
Cuba	Adaptation	The Project for Capacity Enhancement of Groundwater and Seawater Intrusion Management	The project enhances the capacity of groundwater development and management including seawater intrusion management by the monitoring of water bearing layer in target areas, building a groundwater model, groundwater recharge and capacity enhancement of technological aspect of addressing saltwater invasion.
Global	Mitigation	Capacity building project for facilitating Energy Efficiency and Renewable Energy	Establish environments and measures to facilitate the promotion of Energy Efficiency and the introduction of Renewable Energy worldwide through capacity building.
Guyana	Mitigation	Strengthening the performance of the wood processing sector in Guyana, through building local capacity and the enhancing national systems that promote forest products trade and sustainable utilization of forest resources (Guyana)	To increase the competitiveness of the wood processing sector in Guyana, the project trains stakeholders in the wood processing sector, prepare a draft for a national system for inspection and certification of solid wood for domestic and foreign markets, and conducts awareness campaigns for solid wood users.
Indonesia	Mitigation	Initiating The Conservation Of Cempaka Tree Species (Elmerrillia spp.) Through Plantation Development With Local Community Participation In North Sulawesi, Indonesia (Indonesia)	While the demand for cempaka wood is increasing, the supply from natural forest is declining. Cempaka tree species grows naturally only in the North Sulawesi area. To prevent destructive logging of the natural forest, the PD promotes artificial reforestation with the involvement of local communities. This PD contributes to the conservation of cempaka tree species by establishing reforestation technology.
Indonesia	Adaptation	Cooperation on Climate Change Impact Assessment for Local Adaptation Planning in the Republic of Indonesia	This project aims to cooperate on climate change impact assessment to formulate the local climate change adaptation plans under National Action Plan for Climate Change Adaptation (RAN-API) through capacity building for local authorities.
Indonesia	Adaptation	The Project for Assessing and Integrating Climate Change Impacts into the Water Resources Management Plans for Brantas and Musi River Basins	This project formulates strategies against climate change and adaptation and mitigation policies as well as preparing climate change prediction data in the targeted river basin and reevaluating the safety level of flood control and water utilization based on its results.
Indonesia	Multiple Areas	Japan-Indonesia Co-benefits Cooperation	The bilateral cooperation between Japan and Indonesia based on the agreement which was concluded in December 2007 and renewed in September 2011. Study, demonstration and capacity building for reduction of GHG emissions and controlling pollution in agro-industry is conducted in order to contribute further strengthen environmental management in Indonesia.
Malaysia	Mitigation	Capacity building on reduced impact logging(RIL) in dry inland forest in the permanent forest of peninsular Malaysia	Though "Reduced Impact Logging (RIL) has attracted attention as an important component of sustainable forest management, it is not common or well understood at the sites. For this reason, the project is training forest workers for further understanding of knowledge and technology of RIL and its practice.
Mongolia	Adaptation	Supporting Impact Assessment and Adaptation planning on Climate Change in Mongolia	This project aims to support practical formulation for national climate change adaptation planning by cooperation of scientific technical impact assessment in Mongolia.
Mongolia	Multiple Areas	Study on Co-benefits type pollution control for Heat Only Boiler	The study focuses on coal fired Heat Only Boilers to demonstrate co-benefits derived from improvement of the HOB devices and conducting capacity building in order to contribute further strengthen environmental management in Mongolia.

**Provision of capacity-building support<sup>a</sup>**

<i>Recipient country/region</i>	<i>Targeted area</i>	<i>Programme or project title</i>	<i>Description of programme or project<sup>b,c</sup></i>
Panama	Mitigation	Tropical Forest Governance in the Region of Darien, Panama (Panama)	The purpose of the project is to support the implementation of strategies for measures against illegal logging in Darien area. The project establishes a system for implementing measures against illegal logging, establish effective monitoring methods of wood, and propose a financial mechanism for SFM.
Papua New Guinea	Multiple Areas	"Development of Quality - of Governance Standards for Reducing Emissions from Deforestation and Forest Degradation (REDD) in Papua New Guinea	Though the PNG Forestry Authority has undertaken a variety of initiatives to fully promote the concept of REDD+, there also needs to be more consultation in the design of the national REDD+ strategy. This project contributes to climate change measures and sustainable forest management by developing Quality of Governance standards for REDD through survey with stakeholders and others. The University of Southern Queensland, Australia has been implementing this project as a research project, cooperating with the PNG Forestry Authority. Since the PNG Forestry Authority is committed to the Project Steering Committee (PSC), the results of this project are expected to be used for PNG's forest policies and contribute to climate change measures.
Peru	Mitigation	Guideline for the management of Tara(Caesalpinia spinosa) plantations with a view to the rehabilitation of waste lands in the sub-humid tropics of the coastal region of Peru	The southern coastal region of Peru is semi-arid and poor in water resources. A past project confirmed that a timber species "Tara" is effective for plantation in wastelands. For this reason, this project develops guidelines for SFM and agroforestry system in Tara plantation and a technological manual for reforestation.
Senegal	Multiple Areas	Project for Updating Dakar Urbanization Master Plan by the Horizon 2025	Update Dakar Urbanization Master plan by the Horizon 2025 with the target year at 2035 based on the perspective of environmental sustainability.
Sri Lanka	Adaptation	Capacity Building for Community Based Risk Reduction Project	This project aims to build a consistent network between local community, NGOs, enterprises, and local governments allowing to address affectively future natural disasters in Sri Lanka, as well as educate people disaster prevention skills, by organizing meetings, workshops, and seminars.
Thailand	Multiple Areas	Project for Capacity Development on Mitigation/Adaptation for Climate Change in the Southeast Asia Region	Supports for Thailand Greenhouse Gas Management Organization (TGO) to establish the Climate Change International Technical and Training Center (CITC) and develop and implement training program matched with the needs of Thailand and ASEAN developing countries.
Thailand	Multiple Areas	The Project for Bangkok Master Plan on Climate Change 2013 - 2023	This project improves the implementation structure including cooperation with related agencies as well as supporting the formulation of Master Plan on climate Change covering five sectors: energy, transportation, waste/waste water treatment, green urban planning and adaptation planning in the megacity, Bangkok.
Viet Nam, Mexico, Nepal	Multiple Areas	Improved information to promote forest management for protection of soil and water	Develop a set of comprehensive methods for assessing the state of forests primarily designated for soil and water conservation and/ or risk reduction.

<sup>a</sup> To be reported to the extent possible.

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

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

**Custom Footnotes**