

## **Appendix C: Nitrous Oxide Emissions for Years 1990-2010 for Developed Countries**

---

Appendix C summarizes nitrous oxide emissions for developed countries from 1990 through 2010 in the following exhibits:

- Exhibit C-1: Total Nitrous Oxide Emissions from Developed Countries (MMTCO<sub>2</sub>)
- Exhibit C-2: Nitrous Oxide Emissions from Agricultural Soils 1990-2010 (MMTCO<sub>2</sub>)
- Exhibit C-3: Nitrous Oxide Emissions from Industrial Processes 1990-2010 (MMTCO<sub>2</sub>)
- Exhibit C-4: Nitrous Oxide Emissions from Manufacturing and Construction 1990-2010 (MMTCO<sub>2</sub>)
- Exhibit C-5: Nitrous Oxide Emissions from Electric Utilities 1990-2010 (MMTCO<sub>2</sub>)
- Exhibit C-6: Nitrous Oxide Emissions from Stationary Sources 1990-2010 (MMTCO<sub>2</sub>)
- Exhibit C-7 Nitrous Oxide Emissions from Mobile Sources 1990-2010 (MMTCO<sub>2</sub>)
- Exhibit C-8: Nitrous Oxide Emissions from Manure Management 1990-2010 (MMTCO<sub>2</sub>)

**Exhibit C-1: Total Nitrous Oxide Emissions from Developed Countries (MMTCO<sub>2</sub>)**

Developed Country	Nitrous Oxide Emissions (MMTCO <sub>2</sub> )				
	1990	1995	2000	2005	2010
Australia	18	19	23	27	27
Austria	2	2	2	2	2
Belgium	8	9	9	9	10
Bulgaria	24	17	20	23	26
Canada	60	66	64	69	73
Croatia	1	1	2	2	2
Czech Republic	9	6	7	8	9
Denmark	11	10	10	10	9
Estonia	1	1	1	1	1
Finland	4	4	5	5	5
France	87	82	68	69	70
Germany	65	63	43	45	45
Greece	9	8	8	8	8
Hungary	1	1	1	1	1
Iceland	<0.5	<0.5	<0.5	<0.5	<0.5
Ireland	9	9	10	10	10
Italy	42	42	44	45	46
Japan	16	18	24	28	29
Latvia	1	1	1	1	1
Liechtenstein	<0.5	<0.5	<0.5	<0.5	<0.5
Lithuania	2	2	2	2	2
Luxembourg	-	<0.5	<0.5	<0.5	<0.5
Monaco	-	-	-	-	-
Netherlands	19	21	22	22	22
New Zealand	12	12	11	11	12
Norway	5	5	5	5	5
Poland	21	20	22	25	28
Portugal	3	3	4	4	4
Romania	19	12	13	14	16
Russia	79	51	57	67	74
Slovakia	6	3	4	4	5
Slovenia	<0.5	1	1	1	1
Spain	40	37	38	39	40
Sweden	8	2	2	3	3
Switzerland	3	3	3	3	3
Ukraine	44	25	33	40	44
UK	65	55	43	43	44
US	389	423	424	438	455
<b>EU-15</b>	<b>371</b>	<b>347</b>	<b>307</b>	<b>314</b>	<b>318</b>
<b>Other Western Europe</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>
<b>Russia</b>	<b>79</b>	<b>51</b>	<b>57</b>	<b>67</b>	<b>74</b>
<b>Other Eastern Europe</b>	<b>130</b>	<b>89</b>	<b>106</b>	<b>122</b>	<b>136</b>
<b>AUS/NZ</b>	<b>29</b>	<b>31</b>	<b>34</b>	<b>38</b>	<b>39</b>
<b>Japan</b>	<b>16</b>	<b>18</b>	<b>24</b>	<b>28</b>	<b>29</b>
<b>Canada</b>	<b>60</b>	<b>66</b>	<b>64</b>	<b>69</b>	<b>73</b>
<b>US</b>	<b>389</b>	<b>423</b>	<b>424</b>	<b>438</b>	<b>455</b>
<b>Total</b>	<b>1,082</b>	<b>1,033</b>	<b>1,024</b>	<b>1,084</b>	<b>1,131</b>

Note: Dashes indicate that emissions for the respective country were not analyzed.

**Exhibit C-2: Nitrous Oxide Emissions from Agricultural Soils 1990-2010 (MMTCO<sub>2</sub>)**

Developed Country	Nitrous Oxide from Agricultural Soils (MMTCO <sub>2</sub> )				
	1990	1995	2000	2005	2010
Australia	14.5	14.6	15.8	16.8	16.7
Austria	1.0	1.0	1.0	1.0	1.0
Belgium	3.4	2.9	2.9	2.9	2.9
Bulgaria	16.7	11.5	13.3	15.7	17.7
Canada	36.0	39.1	42.8	46.8	50.6
Croatia	0.9	1.1	1.4	1.7	2.0
Czech Republic	5.8	3.0	3.8	4.5	5.1
Denmark	9.8	8.6	8.4	8.1	7.9
Estonia	0.6	0.4	0.5	0.6	0.7
Finland	3.1	2.9	2.8	2.6	2.5
France	53.0	50.3	49.8	49.4	48.9
Germany	26.4	23.7	23.1	22.5	21.9
Greece	6.4	5.7	5.4	5.1	4.8
Hungary	1.2	0.6	0.7	0.9	1.0
Iceland	0.2	0.2	0.2	0.2	0.2
Ireland	6.4	6.9	7.1	7.3	7.4
Italy	20.2	20.9	20.6	20.4	20.1
Japan	1.2	1.0	1.2	1.3	1.3
Latvia	0.5	0.5	0.7	0.8	1.0
Liechtenstein	<0.05	<0.05	<0.05	<0.05	<0.05
Lithuania	1.3	0.9	1.1	1.3	1.4
Luxembourg	-	0.1	0.1	0.1	0.1
Monaco	-	-	-	-	-
Netherlands	6.7	8.3	8.0	7.7	7.4
New Zealand	11.5	11.5	11.1	11.3	11.5
Norway	2.8	2.8	2.7	2.6	2.6
Poland	9.9	10.0	12.2	14.5	16.8
Portugal	2.5	2.2	2.2	2.2	2.1
Romania	11.5	7.0	8.2	9.5	10.8
Russia	49.8	29.0	33.8	40.5	45.3
Slovakia	4.0	2.2	2.5	2.9	3.3
Slovenia	0.4	0.4	0.6	0.7	0.8
Spain	18.0	15.8	15.9	15.9	16.0
Sweden	4.7	0.1	0.1	0.1	0.1
Switzerland	2.5	2.2	2.1	2.1	2.0
Ukraine	24.5	13.4	16.1	20.3	23.8
UK	29.5	28.1	27.4	26.7	26.1
US	269.0	285.0	299.0	308.0	317.0
<b>EU-15</b>	<b>191</b>	<b>178</b>	<b>175</b>	<b>172</b>	<b>169</b>
<b>Other Western Europe</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>
<b>Russia</b>	<b>50</b>	<b>29</b>	<b>34</b>	<b>40</b>	<b>45</b>
<b>Other Eastern Europe</b>	<b>77</b>	<b>51</b>	<b>61</b>	<b>73</b>	<b>84</b>
<b>AUS/NZ</b>	<b>26</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>28</b>
<b>Japan</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>Canada</b>	<b>36</b>	<b>39</b>	<b>43</b>	<b>47</b>	<b>51</b>
<b>US</b>	<b>269</b>	<b>285</b>	<b>299</b>	<b>308</b>	<b>317</b>
<b>Total</b>	<b>656</b>	<b>614</b>	<b>645</b>	<b>675</b>	<b>701</b>
<i>Note: Dashes indicate that emissions for the respective country were not analyzed.</i>					

**Exhibit C-3: Nitrous Oxide Emissions from Industrial Processes 1990-2010 (MMTCO<sub>2</sub>)**

Developed Country	Nitrous Oxide from Industrial Processes (MMTCO <sub>2</sub> )				
	1990	1995	2000	2005	2010
Australia	0.5	0.4	0.4	0.4	0.4
Austria	0.2	0.2	0.2	0.2	0.2
Belgium	3.6	4.3	4.3	4.4	4.4
Bulgaria	2.2	1.9	2.0	2.4	3.0
Canada	11.5	11.5	1.3	1.3	1.3
Croatia	-	-	-	-	-
Czech Republic	1.0	1.1	0.9	0.9	0.9
Denmark	0.0	0.0	0.0	0.0	0.0
Estonia	-	-	-	-	-
Finland	0.0	0.0	0.0	0.0	0.0
France	27.8	25.3	9.8	9.9	10.1
Germany	25.7	25.4	2.6	2.7	2.8
Greece	0.7	0.6	0.6	0.6	0.6
Hungary	-	0.0	0.0	0.0	0.0
Iceland	0.0	0.0	0.0	0.0	0.0
Ireland	1.0	0.8	0.8	0.8	0.8
Italy	7.3	7.3	8.4	8.9	9.3
Japan	7.7	7.8	9.9	10.7	10.7
Latvia	-	-	-	-	-
Liechtenstein	-	-	-	-	-
Lithuania	0.3	0.3	0.3	0.3	0.3
Luxembourg	0.0	0.0	0.0	0.0	0.0
Monaco	-	-	-	-	-
Netherlands	9.8	9.8	9.9	9.9	10.0
New Zealand	-	-	-	-	-
Norway	2.2	1.6	2.0	2.0	2.0
Poland	5.0	5.0	5.0	5.0	5.0
Portugal	0.6	0.6	0.6	0.6	0.6
Romania	4.0	1.9	1.9	1.9	1.9
Russia	-	-	-	-	-
Slovakia	0.6	0.6	0.7	0.8	0.9
Slovenia	-	-	-	-	-
Spain	2.9	2.3	2.3	2.3	2.3
Sweden	0.9	0.0	0.0	0.0	0.0
Switzerland	-	-	-	-	-
Ukraine	7.1	2.2	7.0	8.0	8.0
UK	29.1	18.9	5.6	4.9	4.9
US	36.1	40.2	29.7	32.0	34.6
<b>EU-15</b>	<b>110</b>	<b>95</b>	<b>45</b>	<b>45</b>	<b>46</b>
<b>Other Western Europe</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>
<b>Russia</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Other Eastern Europe</b>	<b>20</b>	<b>13</b>	<b>18</b>	<b>19</b>	<b>20</b>
<b>AUS/NZ</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Japan</b>	<b>8</b>	<b>8</b>	<b>10</b>	<b>11</b>	<b>11</b>
<b>Canada</b>	<b>11</b>	<b>11</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>US</b>	<b>36</b>	<b>40</b>	<b>30</b>	<b>32</b>	<b>35</b>
<b>Total</b>	<b>188</b>	<b>170</b>	<b>106</b>	<b>111</b>	<b>115</b>

*Note: Dashes indicate that emissions for the respective country were not analyzed. Industrial processes emissions includes emissions from nitric acid and adipic acid production.*

**Exhibit C-4: Nitrous Oxide Emissions from Manufacturing and Construction 1990-2010 (MMTCO<sub>2</sub>)**

Developed Country	Nitrous Oxide from Manufacturing and Construction (MMTCO <sub>2</sub> )				
	1990	1995	2000	2005	2010
Australia	0.2	0.3	0.3	0.3	0.3
Austria	<0.05	0.1	0.1	0.1	0.1
Belgium	0.5	0.6	0.6	0.6	0.6
Bulgaria	0.6	0.3	0.4	0.4	0.5
Canada	0.3	0.6	0.7	0.7	0.8
Croatia	<0.05	<0.05	<0.05	<0.05	<0.05
Czech Republic	0.6	0.2	0.2	0.2	0.2
Denmark	0.1	0.1	0.1	0.1	0.1
Estonia	<0.05	<0.05	<0.05	<0.05	<0.05
Finland	0.4	0.5	0.5	0.5	0.6
France	0.8	0.8	0.8	0.8	0.8
Germany	1.9	1.3	1.4	1.4	1.4
Greece	0.5	0.4	0.4	0.5	0.5
Hungary	-	0.0	0.0	0.0	0.0
Iceland	<0.05	<0.05	<0.05	<0.05	<0.05
Ireland	0.1	0.1	0.1	0.1	0.1
Italy	3.1	2.2	2.2	2.2	2.3
Japan	1.4	1.7	1.8	1.9	2.0
Latvia	0.0	0.0	0.0	0.0	0.0
Liechtenstein	-	-	-	-	-
Lithuania	<0.05	<0.05	<0.05	<0.05	<0.05
Luxembourg	-	<0.05	<0.05	<0.05	<0.05
Monaco	-	-	-	-	-
Netherlands	<0.05	<0.05	<0.05	<0.05	<0.05
New Zealand	0.0	0.0	0.0	0.0	0.0
Norway	0.0	0.0	0.0	0.0	0.0
Poland	0.3	0.3	0.4	0.4	0.5
Portugal	0.1	0.1	0.1	0.1	0.1
Romania	0.1	0.1	0.1	0.1	0.1
Russia	1.8	0.9	1.0	1.1	1.3
Slovakia	-	-	-	-	-
Slovenia	<0.05	<0.05	<0.05	<0.05	<0.05
Spain	1.8	2.1	2.1	2.2	2.2
Sweden	0.6	0.7	0.7	0.7	0.7
Switzerland	0.0	0.0	0.0	0.0	0.0
Ukraine	1.4	0.6	0.7	0.8	0.9
UK	0.0	0.0	0.0	0.0	0.0
US	-	-	-	-	-
<b>EU-15</b>	10	9	9	9	9
<b>Other Western Europe</b>	<0.05	<0.05	<0.05	<0.05	<0.05
Russia	2	1	1	1	1
<b>Other Eastern Europe</b>	3	1	2	2	2
<b>AUS/NZ</b>	0	0	0	0	0
Japan	1	2	2	2	2
Canada	0	1	1	1	1
US	-	-	-	-	-
<b>Total</b>	17	14	14	15	16

*Note: Dashes indicate that emissions for the respective country were not analyzed.*

**Exhibit C-5: Nitrous Oxide Emissions from Electric Utilities 1990-2010 (MMTCO<sub>2</sub>)**

Developed Country	Nitrous Oxide from Electric Utilities (MMTCO <sub>2</sub> )				
	1990	1995	2000	2005	2010
Australia	0.4	0.5	0.5	0.5	0.5
Austria	<0.05	<0.05	<0.05	<0.05	<0.05
Belgium	0.7	0.7	0.7	0.7	0.7
Bulgaria	3.1	2.8	3.2	3.6	4.1
Canada	0.9	0.9	1.0	1.0	1.0
Croatia	<0.05	<0.05	<0.05	<0.05	<0.05
Czech Republic	0.9	1.1	1.2	1.4	1.6
Denmark	0.3	0.3	0.3	0.3	0.3
Estonia	0.0	0.2	0.3	0.3	0.4
Finland	0.4	0.5	0.5	0.5	0.5
France	0.6	0.6	0.6	0.6	0.6
Germany	4.4	3.9	4.2	4.2	4.2
Greece	0.8	1.0	1.0	1.1	1.1
Hungary	-	0.0	0.0	0.0	0.0
Iceland	<0.05	<0.05	<0.05	<0.05	<0.05
Ireland	0.4	0.5	0.6	0.6	0.6
Italy	6.0	6.3	6.7	6.7	6.8
Japan	0.6	1.1	1.2	1.2	1.3
Latvia	0.0	0.0	0.0	0.0	0.0
Liechtenstein	-	-	-	-	-
Lithuania	0.1	<0.05	<0.05	<0.05	<0.05
Luxembourg	-	<0.05	<0.05	<0.05	<0.05
Monaco	0.0	0.0	0.0	0.0	0.0
Netherlands	0.2	0.2	0.2	0.2	0.2
New Zealand	0.0	0.0	0.0	0.0	0.0
Norway	0.0	0.0	0.0	0.0	0.0
Poland	0.9	0.9	1.1	1.2	1.3
Portugal	0.1	0.1	0.1	0.1	0.1
Romania	0.9	0.9	1.0	1.2	1.3
Russia	4.4	4.1	4.6	5.3	6.1
Slovakia	0.3	0.0	0.0	0.0	0.0
Slovenia	<0.05	0.1	0.1	0.1	0.1
Spain	0.9	1.0	1.1	1.1	1.1
Sweden	0.3	0.4	0.4	0.4	0.4
Switzerland	0.0	0.0	0.0	0.0	0.0
Ukraine	1.7	1.5	1.7	1.9	2.2
UK	0.0	0.0	0.0	0.0	0.0
US	-	-	-	-	-
<b>EU-15</b>	<b>15</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>17</b>
<b>Other Western Europe</b>	<b>&lt;0.05</b>	<b>&lt;0.05</b>	<b>&lt;0.05</b>	<b>&lt;0.05</b>	<b>&lt;0.05</b>
Russia	4	4	5	5	6
<b>Other Eastern Europe</b>	<b>8</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>
<b>AUS/NZ</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>
<b>Japan</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>Canada</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>US</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Total</b>	<b>29</b>	<b>30</b>	<b>32</b>	<b>34</b>	<b>37</b>

*Note: Dashes indicate that emissions for the respective country were not analyzed.*

**Exhibit C-6: Nitrous Oxide Emissions from Stationary Sources 1990-2010 (MMTCO<sub>2</sub>)**

Developed Country	Nitrous Oxide from Stationary Sources (MMTCO <sub>2</sub> )				
	1990	1995	2000	2005	2010
Australia	0.7	0.7	0.8	0.8	0.9
Austria	0.1	0.1	0.1	0.1	0.1
Belgium	1.2	1.3	1.3	1.3	1.4
Bulgaria	3.7	3.1	3.5	4.0	4.5
Canada	1.2	1.6	1.6	1.7	1.8
Croatia	<0.05	<0.05	<0.05	<0.05	<0.05
Czech Republic	1.6	1.3	1.4	1.6	1.8
Denmark	0.3	0.4	0.4	0.4	0.4
Estonia	<0.05	0.3	0.3	0.3	0.4
Finland	0.7	1.0	1.1	1.1	1.1
France	1.3	1.4	1.4	1.4	1.5
Germany	6.3	5.3	5.5	5.6	5.6
Greece	1.3	1.4	1.5	1.5	1.5
Hungary	-	0.0	0.0	0.0	0.0
Iceland	<0.05	<0.05	<0.05	<0.05	<0.05
Ireland	0.5	0.6	0.7	0.7	0.7
Italy	9.1	8.5	8.9	8.9	9.1
Japan	2.0	2.9	3.0	3.1	3.3
Latvia	0.0	0.0	0.0	0.0	0.0
Liechtenstein	-	-	-	-	-
Lithuania	0.2	<0.05	<0.05	<0.05	<0.05
Luxembourg	-	<0.05	<0.05	<0.05	<0.05
Monaco	0.0	0.0	0.0	0.0	0.0
Netherlands	0.2	0.2	0.2	0.2	0.2
New Zealand	0.0	0.0	0.0	0.0	0.0
Norway	0.0	0.0	0.0	0.0	0.0
Poland	1.2	1.2	1.4	1.6	1.8
Portugal	0.1	0.1	0.2	0.2	0.2
Romania	1.0	1.0	1.1	1.2	1.4
Russia	6.1	4.9	5.6	6.4	7.4
Slovakia	0.3	0.0	0.0	0.0	0.0
Slovenia	<0.05	0.1	0.1	0.1	0.1
Spain	2.7	3.1	3.2	3.3	3.3
Sweden	0.9	1.0	1.1	1.1	1.1
Switzerland	0.0	0.0	0.0	0.0	0.0
Ukraine	3.1	2.1	2.3	2.7	3.0
UK	3.8	3.5	3.7	3.8	3.9
US	13.6	14.3	15.7	17.0	17.8
<b>EU-15</b>	<b>29</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>30</b>
<b>Other Western Europe</b>	<b>&lt;0.05</b>	<b>&lt;0.05</b>	<b>&lt;0.05</b>	<b>&lt;0.05</b>	<b>&lt;0.05</b>
Russia	6	5	6	6	7
<b>Other Eastern Europe</b>	<b>11</b>	<b>9</b>	<b>10</b>	<b>12</b>	<b>13</b>
<b>AUS/NZ</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>
Japan	2	3	3	3	3
Canada	1	2	2	2	2
<b>US</b>	<b>14</b>	<b>14</b>	<b>16</b>	<b>17</b>	<b>18</b>
<b>Total</b>	<b>64</b>	<b>61</b>	<b>66</b>	<b>70</b>	<b>74</b>

*Note: Dashes indicate that emissions for the respective country were not analyzed.*

**Exhibit C-7: Nitrous Oxide Emissions from Mobile Sources 1990-2010 (MMTCO<sub>2</sub>)**

Developed Country	Nitrous Oxide from Mobile Sources (MMTCO <sub>2</sub> )				
	1990	1995	2000	2005	2010
Australia	1.6	3.1	5.6	8.1	8.7
Austria	0.3	0.6	0.7	0.8	0.9
Belgium	0.2	0.4	0.6	0.7	0.7
Bulgaria	0.0	0.0	0.0	0.0	0.0
Canada	6.5	8.7	12.5	13.3	12.8
Croatia	<0.05	<0.05	<0.05	<0.05	<0.05
Czech Republic	0.1	0.1	0.1	0.1	0.2
Denmark	0.1	0.3	0.5	0.6	0.7
Estonia	0.0	<0.05	<0.05	<0.05	<0.05
Finland	0.5	0.6	0.9	1.3	1.6
France	1.2	2.1	3.9	5.2	5.9
Germany	3.2	5.4	9.3	11.6	12.3
Greece	0.2	0.3	0.4	0.5	0.7
Hungary	-	-	-	-	-
Iceland	0.0	0.0	0.0	0.0	0.0
Ireland	0.1	0.2	0.3	0.4	0.5
Italy	1.1	1.7	2.6	3.6	4.5
Japan	4.0	4.4	7.7	11.0	11.8
Latvia	0.0	0.0	0.0	0.0	0.0
Liechtenstein	-	-	-	-	-
Lithuania	0.1	<0.05	<0.05	<0.05	<0.05
Luxembourg	-	<0.05	<0.05	<0.05	<0.05
Monaco	0.0	0.0	0.0	0.0	0.0
Netherlands	2.0	2.3	3.2	3.5	3.8
New Zealand	0.0	0.0	0.0	0.0	0.0
Norway	0.3	0.3	0.4	0.4	0.4
Poland	0.3	0.3	0.4	0.6	0.9
Portugal	0.1	0.3	0.5	0.8	1.0
Romania	0.1	0.1	0.1	0.1	0.1
Russia	1.4	0.6	0.6	0.6	0.7
Slovakia	0.0	0.0	0.0	0.0	0.0
Slovenia	<0.05	<0.05	<0.05	<0.05	<0.05
Spain	0.9	1.3	2.3	3.3	4.1
Sweden	0.9	0.9	1.2	1.5	1.8
Switzerland	0.3	0.6	0.9	0.9	0.9
Ukraine	0.2	0.1	0.1	0.1	0.1
UK	1.3	2.8	4.7	6.4	7.1
US	54.3	66.8	62.2	61.8	65.9
<b>EU-15</b>	12	19	31	40	46
<b>Other Western Europe</b>	1	1	1	1	1
<b>Russia</b>	1	1	1	1	1
<b>Other Eastern Europe</b>	1	1	1	1	1
<b>AUS/NZ</b>	2	3	6	8	9
<b>Japan</b>	4	4	8	11	12
<b>Canada</b>	7	9	13	13	13
<b>US</b>	54	67	62	62	66
<b>Total</b>	82	104	122	137	148

*Note: Dashes indicate that emissions for the respective country were not analyzed.*

**Exhibit C-8: Nitrous Oxide Emissions from Manure Management 1990-2010 (MMT $\text{CO}_2$ )**

Developed Country	Nitrous Oxide from Manure Management (MMT $\text{CO}_2$ )				
	1990	1995	2000	2005	2010
Australia	0.3	0.5	0.5	0.6	0.6
Austria	0.0	0.0	0.0	0.0	0.0
Belgium	0.0	0.1	0.1	0.1	0.1
Bulgaria	0.9	0.6	0.6	0.7	0.8
Canada	4.3	5.0	5.5	6.2	6.8
Croatia	0.2	0.2	0.3	0.3	0.3
Czech Republic	1.0	0.8	1.0	1.0	1.0
Denmark	0.5	0.5	0.5	0.5	0.5
Estonia	0.2	0.2	0.2	0.2	0.2
Finland	-	-	-	-	-
France	3.2	3.1	3.1	3.1	3.1
Germany	3.4	2.7	2.5	2.4	2.3
Greece	0.1	0.2	0.2	0.2	0.2
Hungary	-	-	-	-	-
Iceland	<0.05	<0.05	<0.05	<0.05	<0.05
Ireland	0.6	0.7	0.7	0.7	0.7
Italy	3.8	3.8	3.6	3.5	3.3
Japan	1.5	1.4	1.7	1.6	1.6
Latvia	0.0	0.2	0.2	0.2	0.2
Liechtenstein	<0.05	<0.05	<0.05	<0.05	<0.05
Lithuania	0.6	0.5	0.5	0.5	0.5
Luxembourg	-	0.0	0.0	0.0	0.0
Monaco	-	-	-	-	-
Netherlands	0.2	0.2	0.2	0.2	0.2
New Zealand	0.0	0.0	0.0	0.0	0.0
Norway	-	-	-	-	-
Poland	4.2	3.2	3.2	3.2	3.2
Portugal	<0.05	<0.05	<0.05	<0.05	<0.05
Romania	2.7	1.7	1.7	1.7	1.7
Russia	21.3	16.6	17.2	19.5	20.3
Slovakia	1.2	0.6	0.6	0.6	0.6
Slovenia	0.0	0.2	0.2	0.2	0.2
Spain	15.2	14.5	14.5	14.5	14.5
Sweden	0.6	-	-	-	-
Switzerland	0.3	0.3	0.3	0.3	0.3
Ukraine	9.4	7.3	7.6	8.6	9.0
UK	1.6	1.6	1.6	1.6	1.6
US	16.0	16.4	17.4	19.0	19.9
<b>EU-15</b>	<b>29</b>	<b>27</b>	<b>27</b>	<b>27</b>	<b>27</b>
<b>Other Western Europe</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Russia</b>	<b>21</b>	<b>17</b>	<b>17</b>	<b>20</b>	<b>20</b>
<b>Other Eastern Europe</b>	<b>21</b>	<b>16</b>	<b>16</b>	<b>17</b>	<b>17</b>
<b>AUS/NZ</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>Japan</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>2</b>
<b>Canada</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>6</b>	<b>7</b>
<b>US</b>	<b>16</b>	<b>16</b>	<b>17</b>	<b>19</b>	<b>20</b>
<b>Total</b>	<b>94</b>	<b>83</b>	<b>86</b>	<b>91</b>	<b>94</b>

*Note: Dashes indicate that emissions for the respective country were not analyzed.*