

## Representative GHG Baselines for Cities and their Respective Countries

Values in bold are peer-reviewed and considered comparable. Inventory year, source, and inventory content are indicated with endnotes. All per capita national emissions are calculated from national inventories submitted under the UNFCCC and exclude LULUCF; national population figures are from World Bank WDI data and correspond to the inventory year.

Country / City	GHG Emissions (tCO <sub>2</sub> e/capita)	Country / City	GHG Emissions (tCO <sub>2</sub> e/capita)	Country / City	GHG Emissions (tCO <sub>2</sub> e/capita)
<b>Argentina</b>	<b>7.64</b> 2000	<b>France</b>	<b>8.68</b> 2007	<b>Norway</b>	<b>11.69</b> 2007
Buenos Aires	3.83 1	<b>Paris</b>	<b>5.2</b> 2005, 3	<b>Oslo</b>	<b>3.5</b> 2005, 3
<b>Australia</b>	<b>25.75</b> 2007	<b>Germany</b>	<b>11.62</b> 2007	<b>Portugal</b>	<b>7.71</b> 2007
Sydney	0.88 2006, 2	<b>Frankfurt</b>	<b>13.7</b> 2005, 3	<b>Porto</b>	<b>7.3</b> 2005, 3
<b>Bangladesh</b>	<b>0.37</b> 1994	<b>Hamburg</b>	<b>9.7</b> 2005, 3	<b>Republic of Korea</b>	<b>11.46</b> 2001
Dhaka	0.63 1	<b>Stuttgart</b>	<b>16.0</b> 2005, 3	Seoul	4.1 2006, 3
<b>Belgium</b>	<b>12.36</b> 2007	<b>Greece</b>	<b>11.78</b> 2007	<b>Singapore</b>	<b>7.86</b> 1994
<b>Brussels</b>	<b>7.5</b> 2005, 3	<b>Athens</b>	<b>10.4</b> 2005, 3	<b>Slovenia</b>	<b>10.27</b> 2007
<b>Brazil</b>	<b>4.16</b> 1994	<b>India</b>	<b>1.33</b> 1994	<b>Ljubljana</b>	<b>9.5</b> 2005, 3
<b>Rio de Janeiro</b>	<b>2.1</b> 1998, 3, i	Ahmedabad	1.20 1	<b>South Africa</b>	<b>9.92</b> 1994
<b>São Paulo</b>	<b>1.4</b> 2000, 3, i	Delhi	1.50 2000, 8	<b>Cape Town</b>	<b>11.6</b> 2005, 5, i
<b>Canada</b>	<b>22.65</b> 2007	Kolkata	1.10 2000, 8	<b>Spain</b>	<b>9.86</b> 2007
<b>Calgary</b>	<b>17.7</b> 2003, 3	<b>Italy</b>	<b>9.31</b> 2007	<b>Barcelona</b>	<b>4.2</b> 2006, 5, i
Toronto (City of Toronto)	9.5 2004, 4	<b>Bologna (Province)</b>	<b>11.1</b> 2005, 3	<b>Madrid</b>	<b>6.9</b> 2005, 3
<b>Toronto (Metropolitan Area)</b>	<b>11.6</b> 2005, 5, i	<b>Naples (Province)</b>	<b>4.0</b> 2005, 3	<b>Sri Lanka</b>	<b>1.61</b> 1995
Vancouver	4.9 2006, 6	<b>Turin</b>	<b>9.7</b> 2005, 3	Colombo	1.54 1
<b>China</b>	<b>3.40</b> 1994	<b>Veneto (Province)</b>	<b>10.0</b> 2005, 3	Kurunegala	9.63 1
<b>Beijing</b>	<b>10.1</b> 2006, 3, i	<b>Japan</b>	<b>10.76</b> 2007	<b>Sweden</b>	<b>7.15</b> 2007
<b>Shanghai</b>	<b>11.7</b> 2006, 3, i	<b>Tokyo</b>	<b>4.89</b> 2006, 3, i	<b>Stockholm</b>	<b>3.6</b> 2005, 3
<b>Tianjin</b>	<b>11.1</b> 2006, 3, i	<b>Jordan</b>	<b>4.04</b> 2000	<b>Switzerland</b>	<b>6.79</b> 2007
Chongqing	3.7 2006, 7	<b>Amman</b>	<b>3.25</b> 2008, 9, i	<b>Geneva</b>	<b>7.8</b> 2005, 5, i
<b>Czech Republic</b>	<b>14.59</b> 2007	<b>Mexico</b>	<b>5.53</b> 2002	<b>The Netherlands</b>	<b>12.67</b> 2007
<b>Prague</b>	<b>9.4</b> 2005, 5, i	Mexico City (City)	4.25 2007, 10	<b>Rotterdam</b>	<b>29.8</b> 2005, 3
<b>Finland</b>	<b>14.81</b> 2007	Mexico City (Metropolitan Area)	2.84 2007, 10		
<b>Helsinki</b>	<b>7.0</b> 2005, 3	<b>Nepal</b>	<b>1.48</b> 1994		
		Kathmandu	0.12 1		

Country / City	GHG Emissions (tCO <sub>2</sub> e/capita)	Country / City	GHG Emissions (tCO <sub>2</sub> e/capita)	Country / City	GHG Emissions (tCO <sub>2</sub> e/capita)
<b>Thailand</b>	<b>3.76</b> 1994	<b>USA</b>	<b>23.59</b> 2007	<b>Los Angeles</b>	<b>13.0</b> 2000, 5, i
<b>Bangkok</b>	<b>10.7</b> 2005, 5, i	<b>Austin</b>	<b>15.57</b> 2005, 3	Menlo Park	16.37 2005, 16
<b>UK</b>	<b>10.50</b> 2007	Baltimore	14.4 2007, 12	Miami	11.9 13
London (City of London)	6.2 2006, 11	Boston	13.3 13	<b>Minneapolis</b>	<b>18.34</b> 2005, 3
<b>London (Greater London Area)</b>	<b>9.6</b> 2003, 5, i	Chicago	12.0 2000, 14	<b>New York City</b>	<b>10.5</b> 2005, 5, i
<b>Glasgow</b>	<b>8.8</b> 2004, 3	Dallas	15.2 13	<b>Portland, OR</b>	<b>12.41</b> 2005, 3
		<b>Denver</b>	<b>21.5</b> 2005, 5, i, †	San Diego	11.4 13
		Houston	14.1 13	San Francisco	10.1 13
		Philadelphia	11.1 13	<b>Seattle</b>	<b>13.68</b> 2005, 3
		Juneau	14.37 2007, 15	Washington, DC	19.70 2005, 17

i Value includes emissions from aviation and marine sources.

† Value for Denver is available including embodied emission in food and cement: 25.3 tCO<sub>2</sub>e/cap, see Ramaswami, A., T. Hillman, B. Janson, M. Reiner, and G. Thomas (2008), "A Demand-Centered, Hybrid Life-Cycle Methodology for City-Scale Greenhouse Gas Inventories." *Environmental Science and Technology*. Vol. 42 No. 17. pp 6455-6461.

1 Values provided by ICLEI

2 City of Sydney (2008), "Local Government Area Greenhouse Gas Emissions", Available:

<http://cityofsydney.nsw.gov.au/Environment/GreenhouseAndAirQuality/CurrentStatus/GreenhouseGasEmissions.asp>, [Accessed March 2010].

3 Kennedy C., Ramaswami A., Carney S., and Dhakal S. (2009), "Greenhouse Gas Emission Baselines for Global Cities and Metropolitan Regions", Proceedings of the 5<sup>th</sup> Urban Research Symposium, Marseille, France, June 28-30, 2009.

4 City of Toronto (2007). Greenhouse Gases and Air Pollutants in the City of Toronto (2004). Available: <http://www.toronto.ca/teo/pdf/ghg-aq-inventory-june2007.pdf>. [Accessed March 2010].

5 Kennedy C., J. Steinberger, B. Gasson, Y. Hansen, T. Hillman, M. Havranek, D. Pataki, A. Phdungsilp, A. Ramaswami, and G. Villalba Mendez (2009), "Greenhouse gas emissions from global cities." *Environ. Sci. Technol.*, 43, 7297–7302.

6 City of Vancouver (2007), Climate Protection Progress Report. Available: <http://vancouver.ca/sustainability/documents/Progress2007.pdf>. [Accessed March 2010].

7 Dhakal, S. (2009), "Urban energy use and carbon emissions from cities in China and policy implications." *Energy Policy*, 37, 4208–4219.

8 Mitra, A.P., C. Sharma, and M.A.Y. Ajero (2003), "Energy and Emissions in South-Asian Mega-cities: Study on Kolkata, Delhi, and Manila." Proceedings of International Workshop on Policy Integration Towards Sustainable Energy Use for Cities in Asia. IGES. February 4-5, 2003.

9 Sugar, L. (2010), Amman's Greenhouse Gas Emissions. The World Bank.

10 Mexico City Government, Cities, Climate Change, and Carbon Finance Presentation. Available at

<http://siteresources.worldbank.org/INTCARFINASS/Resources/VazquezCitiesClimateChangeandFinance.pdf>. [Accessed March 2010].

11 Mayor of London (2007), Action Today to Protect Tomorrow: The Mayor's Climate Change Action Plan. Greater London Authority. Available: <http://www.lowcvp.org.uk/assets/reports/London%20-%20climate%20change%20action%20plan.pdf>. [Accessed March 2010].

12 City of Baltimore, Greenhouse Gas Emissions Inventory for Baltimore City. Available at

[http://www.ci.baltimore.md.us/government/planning/sustainability/downloads/presentations/102008GHG\\_Emissions\\_Inventory\\_Presentation.pdf](http://www.ci.baltimore.md.us/government/planning/sustainability/downloads/presentations/102008GHG_Emissions_Inventory_Presentation.pdf). [Accessed March 2010].

13 U.S. EPA (2009), Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2007.

14 The Center for Neighborhood Technology (2008), Chicago's Greenhouse Gas Emissions: An Inventory, Forecast and Mitigation Analysis for Chicago and the Metropolitan Region. Chicago Climate Action Plan. Available: [http://www.cnt.org/repository/CNT\\_Climate\\_Research\\_Summary\\_9.17.08.pdf](http://www.cnt.org/repository/CNT_Climate_Research_Summary_9.17.08.pdf). [Accessed March 2010].

15 City & Borough of Juneau (2009), City & Borough of Juneau Greenhouse Gas Emissions Inventory for 2007. Available:

[http://www.juneau.org/clerk/boards/Sustainability/Agendas\\_and\\_Minutes/Agendas/documents/Juneau\\_Report\\_GHG\\_Inventory\\_DRAFT\\_2-4-09\\_with\\_updated\\_links131.pdf](http://www.juneau.org/clerk/boards/Sustainability/Agendas_and_Minutes/Agendas/documents/Juneau_Report_GHG_Inventory_DRAFT_2-4-09_with_updated_links131.pdf). [Accessed March 2010].

16 City of Menlo Park, Greenhouse Gas Emissions Analysis – 2005 Community Emissions Inventory & 2005 Municipal Operations Emissions Inventory. Available:

[http://www.menlopark.org/departments/env/ggeir\\_208.pdf](http://www.menlopark.org/departments/env/ggeir_208.pdf). [Accessed March 2010].

17 Air Quality Division (2005), District of Columbia Greenhouse Gas Inventories and Preliminary Projections. District of Columbia Department of Health, Air Quality Division.