

## California Greenhouse Gas Inventory for 2000-2013 — by Sector and Activity

million tonnes of CO2 equivalent - (based upon IPCC Fourth Assessment Report's Global Warming Potentials)

Included Emissions	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>Electricity Generation (In State)</b>	<b>59.19</b>	<b>63.21</b>	<b>49.88</b>	<b>48.25</b>	<b>49.35</b>	<b>45.24</b>	<b>50.05</b>	<b>54.30</b>	<b>54.49</b>	<b>53.45</b>	<b>46.87</b>	<b>41.34</b>	<b>51.18</b>	<b>50.58</b>
<i>CHP: Commercial</i>	0.73	0.67	0.76	0.86	0.69	0.73	0.72	0.78	0.77	1.05	0.79	0.86	0.62	0.59
<i>CHP: Industrial</i>	18.16	16.70	20.24	17.76	15.29	14.79	13.84	13.79	13.63	14.77	12.56	13.81	12.55	14.30
<i>Merchant Owned</i>	32.96	38.86	23.80	24.05	27.53	23.15	26.23	29.27	28.79	27.38	21.38	15.31	24.22	22.94
<i>Transmission and Distribution</i>	0.24	0.23	0.19	0.19	0.19	0.19	0.20	0.17	0.17	0.17	0.17	0.16	0.16	0.12
<i>Utility Owned</i>	7.10	6.75	4.89	5.38	5.64	6.39	9.06	10.28	11.14	10.07	11.98	11.20	13.63	12.63
<b>Electricity Generation (Imports)</b>	<b>45.99</b>	<b>59.12</b>	<b>59.07</b>	<b>64.66</b>	<b>66.15</b>	<b>62.90</b>	<b>54.76</b>	<b>59.89</b>	<b>65.91</b>	<b>48.13</b>	<b>43.67</b>	<b>46.94</b>	<b>44.15</b>	<b>40.05</b>
<i>Specified Imports</i>	31.64	33.59	32.04	32.51	33.13	32.79	26.73	27.08	27.90	33.05	30.14	31.34	26.59	28.46
<i>Transmission and Distribution</i>	0.09	0.10	0.11	0.10	0.10	0.10	0.08	0.09	0.09	0.08	0.08	0.08	0.08	0.06
<i>Unspecified Imports</i>	14.27	25.42	26.92	32.05	32.92	30.01	27.95	32.73	37.92	14.99	13.45	15.52	17.48	11.53
<b>Transportation</b>	<b>178.12</b>	<b>178.53</b>	<b>185.72</b>	<b>185.70</b>	<b>189.32</b>	<b>191.62</b>	<b>191.74</b>	<b>191.94</b>	<b>180.93</b>	<b>174.51</b>	<b>173.70</b>	<b>171.41</b>	<b>170.85</b>	<b>172.53</b>
<i>Aviation</i>	4.15	4.07	4.12	4.25	4.50	4.50	4.57	4.98	4.51	4.04	3.85	3.75	3.73	3.88
<i>Not Specified Transportation</i>	3.32	3.35	3.46	3.58	3.77	4.08	4.10	4.20	4.44	4.43	4.59	4.55	4.57	4.64
<i>Off Road</i>	2.63	2.79	2.77	2.84	3.03	3.22	3.32	3.18	2.82	2.25	2.03	2.13	2.23	2.33
<i>On Road</i>	162.64	163.12	169.25	168.52	171.30	172.42	172.12	172.15	162.77	158.20	157.22	154.80	153.96	155.24
<i>Rail</i>	1.88	1.89	2.50	2.70	2.91	3.34	3.53	3.17	2.38	1.94	2.33	2.49	2.48	2.48
<i>Water-borne</i>	3.50	3.32	3.63	3.80	3.81	4.06	4.11	4.27	4.02	3.66	3.68	3.70	3.88	3.96
<b>Industrial</b>	<b>105.40</b>	<b>104.16</b>	<b>105.33</b>	<b>104.40</b>	<b>106.57</b>	<b>104.88</b>	<b>103.26</b>	<b>100.16</b>	<b>101.12</b>	<b>98.95</b>	<b>102.70</b>	<b>103.21</b>	<b>103.87</b>	<b>104.16</b>
<i>CHP: Industrial</i>	11.73	10.48	10.65	10.59	12.92	12.41	12.16	11.15	10.40	12.55	12.60	11.14	10.81	9.82
<i>Landfills</i>	7.21	7.36	7.30	7.42	7.40	7.58	7.65	7.70	7.84	7.94	7.99	8.25	8.25	8.32
<i>Manufacturing</i>	28.07	27.32	28.68	25.14	25.44	24.62	24.93	22.88	23.68	20.40	22.45	24.41	24.90	25.12
<i>Mining</i>	0.86	0.31	0.31	0.34	0.36	0.34	0.11	0.16	0.19	0.14	0.15	0.15	0.16	0.16
<i>Not Specified Industrial</i>	2.39	2.42	2.65	2.68	2.91	3.09	3.31	3.44	3.66	3.86	4.22	4.28	4.34	4.47
<i>Oil &amp; Gas Extraction</i>	19.81	20.18	18.91	21.39	21.07	19.74	18.07	18.18	19.43	18.34	17.44	17.37	18.06	19.65
<i>Petroleum Marketing</i>	0.01	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.03	0.03	0.00
<i>Petroleum Refining and Hydrogen Production</i>	28.45	29.03	29.18	29.82	29.06	29.73	29.63	29.19	28.40	28.27	30.32	30.05	29.81	29.20
<i>Pipelines</i>	4.16	4.34	4.90	4.28	4.62	4.53	4.55	4.57	4.64	4.63	4.65	4.65	4.61	4.47
<i>Solid Waste Treatment</i>	0.24	0.26	0.29	0.31	0.33	0.36	0.38	0.40	0.43	0.45	0.47	0.50	0.52	0.54
<i>Wastewater Treatment</i>	2.47	2.44	2.45	2.43	2.45	2.48	2.46	2.48	2.46	2.36	2.40	2.39	2.38	2.41
<b>Commercial</b>	<b>14.95</b>	<b>15.01</b>	<b>17.08</b>	<b>16.29</b>	<b>17.08</b>	<b>17.15</b>	<b>17.90</b>	<b>18.47</b>	<b>19.00</b>	<b>20.28</b>	<b>21.57</b>	<b>22.20</b>	<b>22.42</b>	<b>22.63</b>
<i>CHP: Commercial</i>	1.09	1.05	1.06	0.26	0.62	0.40	0.42	0.49	0.37	0.92	0.92	0.78	0.76	0.72
<i>Communication</i>	0.19	0.18	0.20	0.19	0.19	0.17	0.19	0.18	0.16	0.16	0.15	0.15	0.14	0.14
<i>Domestic Utilities</i>	0.25	0.18	0.17	0.37	0.33	0.23	0.29	0.30	0.28	0.28	0.27	0.26	0.26	0.25
<i>Education</i>	1.22	1.07	1.24	1.09	1.09	1.08	1.12	1.10	1.01	1.03	1.05	1.06	0.99	1.02
<i>Food Services</i>	1.90	1.97	2.48	2.31	2.28	2.30	2.47	2.43	2.31	2.23	2.23	2.25	2.28	2.33
<i>Health Care</i>	1.39	1.42	1.65	1.48	1.43	1.43	1.52	1.49	1.45	1.45	1.51	1.55	1.54	1.56

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million tonnes of CO<sub>2</sub> equivalent - (based upon IPCC Fourth Assessment Report's Global Warming Potentials)

<b>Included Emissions</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
<i>Hotels</i>	0.63	0.67	0.78	0.69	0.68	0.68	0.75	0.75	0.73	0.70	0.73	0.74	0.73	0.74
<i>Landscape</i>	0.50	0.51	0.51	0.52	0.53	0.53	0.53	0.54	0.54	0.55	0.55	0.55	0.56	0.56
<i>National Security</i>	0.20	0.31	0.21	0.19	0.20	0.18	0.21	0.20	0.17	0.18	0.17	0.18	0.16	0.14
<i>Not Specified Commercial</i>	5.82	6.11	6.86	7.37	7.94	8.36	8.46	8.97	9.79	10.61	11.76	12.39	12.60	12.86
<i>Offices</i>	0.77	0.55	0.66	0.67	0.70	0.68	0.72	0.63	0.69	0.67	0.68	0.69	0.66	0.64
<i>Retail &amp; Wholesale</i>	0.82	0.87	1.13	1.03	1.01	1.02	1.11	1.06	0.97	1.00	1.02	1.05	1.18	1.09
<i>Transportation Services</i>	0.18	0.13	0.13	0.11	0.10	0.09	0.12	0.34	0.51	0.51	0.53	0.56	0.57	0.58
<b>Residential</b>	<b>31.82</b>	<b>30.90</b>	<b>31.07</b>	<b>30.62</b>	<b>31.67</b>	<b>30.46</b>	<b>30.79</b>	<b>30.93</b>	<b>31.30</b>	<b>31.10</b>	<b>32.19</b>	<b>33.04</b>	<b>31.15</b>	<b>32.32</b>
<i>Household Use</i>	29.38	28.47	28.62	28.14	29.17	27.98	28.36	28.50	28.82	28.45	29.18	29.64	27.34	28.11
<i>Landscape</i>	0.74	0.75	0.76	0.77	0.78	0.78	0.79	0.79	0.80	0.80	0.81	0.81	0.82	0.83
<i>Not Specified Residential</i>	1.70	1.68	1.70	1.71	1.72	1.70	1.64	1.63	1.68	1.85	2.20	2.58	2.99	3.38
<b>Agriculture &amp; Forestry</b>	<b>32.10</b>	<b>32.57</b>	<b>34.07</b>	<b>34.63</b>	<b>34.34</b>	<b>35.08</b>	<b>36.30</b>	<b>36.04</b>	<b>36.48</b>	<b>34.86</b>	<b>34.50</b>	<b>35.68</b>	<b>36.43</b>	<b>36.21</b>
<i>Ag Energy Use</i>	3.81	3.82	4.38	4.37	4.52	4.62	5.32	3.79	3.91	2.65	2.81	3.66	3.80	3.83
<i>Ag Residue Burning</i>	0.08	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.08
<i>Ag Soil Management</i>	7.21	7.07	7.28	7.32	7.27	7.29	7.41	7.14	7.14	6.90	6.93	7.16	7.26	7.02
<i>Enteric Fermentation</i>	10.26	10.45	10.74	10.89	10.78	11.14	11.24	11.93	11.89	11.71	11.51	11.49	11.78	11.78
<i>Histosol Cultivation</i>	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
<i>Manure Management</i>	9.40	10.00	10.32	10.75	10.28	10.67	10.98	11.80	12.20	12.17	11.84	11.89	12.14	12.14
<i>Rice Cultivation</i>	1.19	1.02	1.14	1.10	1.28	1.14	1.13	1.15	1.12	1.20	1.20	1.26	1.22	1.21
<b>Not Specified</b>	<b>1.20</b>	<b>1.07</b>	<b>0.94</b>	<b>0.98</b>	<b>0.87</b>	<b>0.89</b>	<b>0.89</b>	<b>0.87</b>	<b>0.85</b>	<b>0.79</b>	<b>0.82</b>	<b>0.79</b>	<b>0.78</b>	<b>0.79</b>
<i>Solvents &amp; Chemicals</i>	1.20	1.07	0.94	0.98	0.87	0.89	0.89	0.87	0.85	0.79	0.82	0.79	0.78	0.79
<b>Summary for Included Emissions</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
California Emissions	468.8	484.6	483.2	485.5	495.3	488.2	485.7	492.6	490.1	462.1	456.0	454.6	460.8	459.3

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<b>Excluded Emissions</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
<b>Transportation</b>	<b>50.94</b>	<b>44.02</b>	<b>48.97</b>	<b>43.26</b>	<b>47.36</b>	<b>50.68</b>	<b>53.19</b>	<b>56.03</b>	<b>52.54</b>	<b>52.04</b>	<b>51.39</b>	<b>47.20</b>	<b>44.40</b>	<b>46.25</b>
<i>Aviation</i>	35.18	32.51	35.19	33.80	36.18	35.84	36.79	38.44	34.87	34.20	33.50	34.00	32.70	34.55
<i>Water-borne</i>	15.75	11.51	13.78	9.46	11.18	14.84	16.40	17.58	17.67	17.84	17.89	13.20	11.70	11.70
<b>Military</b>	<b>3.81</b>	<b>4.36</b>	<b>4.13</b>	<b>4.18</b>	<b>3.88</b>	<b>3.41</b>	<b>3.11</b>	<b>2.93</b>	<b>2.77</b>	<b>2.70</b>	<b>3.16</b>	<b>2.71</b>	<b>3.30</b>	<b>3.38</b>
<i>Not Specified Military</i>	3.81	4.36	4.13	4.18	3.88	3.41	3.11	2.93	2.77	2.70	3.16	2.71	3.30	3.38
<b>Summary for Excluded Emissions</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
<b>International and Interstate Emissions</b>	<b>54.7</b>	<b>48.4</b>	<b>53.1</b>	<b>47.4</b>	<b>51.2</b>	<b>54.1</b>	<b>56.3</b>	<b>59.0</b>	<b>55.3</b>	<b>54.7</b>	<b>54.6</b>	<b>49.9</b>	<b>47.7</b>	<b>49.6</b>

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<b>CO<sub>2</sub> from biogenic materials</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
<b>Electricity Generation (In State)</b>	<b>8.20</b>	<b>8.35</b>	<b>8.49</b>	<b>8.73</b>	<b>8.11</b>	<b>8.16</b>	<b>8.39</b>	<b>7.97</b>	<b>8.03</b>	<b>9.32</b>	<b>8.93</b>	<b>9.88</b>	<b>9.76</b>	<b>9.84</b>
<i>CHP: Commercial</i>	0.27	0.10	0.16	0.31	0.31	0.37	0.35	0.31	0.31	0.16	0.02	0.27	0.14	0.24
<i>CHP: Industrial</i>	1.74	2.39	1.70	1.83	1.38	1.27	1.26	1.26	1.12	1.00	1.15	1.16	1.38	1.60
<i>Merchant Owned</i>	6.06	5.66	6.38	6.26	6.14	6.18	6.44	6.05	6.25	7.56	7.01	7.38	7.06	6.79
<i>Utility Owned</i>	0.13	0.21	0.25	0.33	0.27	0.34	0.35	0.35	0.35	0.60	0.75	1.06	1.18	1.21
<b>Industrial</b>	<b>12.15</b>	<b>12.78</b>	<b>11.08</b>	<b>11.08</b>	<b>11.75</b>	<b>12.63</b>	<b>12.71</b>	<b>12.91</b>	<b>12.74</b>	<b>12.54</b>	<b>12.64</b>	<b>12.96</b>	<b>13.14</b>	<b>13.30</b>
<i>CHP: Industrial</i>	1.30	1.03	0.61	0.62	1.14	1.50	1.53	1.52	1.48	1.24	1.10	1.28	1.21	1.18
<i>Landfills</i>	6.28	6.62	6.88	6.86	6.90	7.09	7.31	7.40	7.47	7.56	7.65	7.66	7.82	7.90
<i>Manufacturing</i>	0.06	0.06	0.07	0.07	0.07	0.07	0.05	0.05	0.06	0.07	0.10	0.09	0.14	0.19
<i>Not Specified Industrial</i>	3.72	4.19	2.57	2.50	2.53	2.78	2.56	2.59	2.32	2.18	2.21	2.28	2.23	2.23
<i>Petroleum Refining and Hydrogen Production</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
<i>Solid Waste Treatment</i>	0.80	0.87	0.95	1.03	1.11	1.19	1.26	1.34	1.42	1.50	1.57	1.65	1.73	1.81
<b>Commercial</b>	<b>0.62</b>	<b>0.60</b>	<b>0.62</b>	<b>0.64</b>	<b>0.66</b>	<b>0.49</b>	<b>0.48</b>	<b>0.52</b>	<b>0.52</b>	<b>0.46</b>	<b>0.41</b>	<b>0.61</b>	<b>0.53</b>	<b>0.62</b>
<i>CHP: Commercial</i>	0.04	0.02	0.02	0.02	0.05	0.10	0.12	0.14	0.12	0.06	0.01	0.14	0.12	0.21
<i>Not Specified Commercial</i>	0.58	0.59	0.60	0.63	0.61	0.39	0.36	0.38	0.41	0.40	0.40	0.47	0.41	0.41
<b>Residential</b>	<b>3.47</b>	<b>3.33</b>	<b>3.38</b>	<b>3.56</b>	<b>3.65</b>	<b>2.43</b>	<b>2.15</b>	<b>2.32</b>	<b>2.55</b>	<b>2.44</b>	<b>2.38</b>	<b>3.12</b>	<b>2.91</b>	<b>2.91</b>
<i>Household Use</i>	3.47	3.33	3.38	3.56	3.65	2.43	2.15	2.32	2.55	2.44	2.38	3.12	2.91	2.91
<b>Agriculture &amp; Forestry</b>	<b>1.39</b>	<b>1.16</b>	<b>1.16</b>	<b>1.20</b>	<b>1.21</b>	<b>1.20</b>	<b>1.22</b>	<b>1.26</b>	<b>1.34</b>	<b>1.36</b>	<b>1.39</b>	<b>1.47</b>	<b>1.49</b>	<b>1.51</b>
<i>Ag Residue Burning</i>	1.39	1.16	1.16	1.20	1.21	1.20	1.22	1.26	1.34	1.36	1.39	1.47	1.49	1.51
<b>Summary for CO<sub>2</sub> from biogenic materials</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
Carbon dioxide from Biogenic sources	25.8	26.2	24.7	25.2	25.4	24.9	25.0	25.0	25.2	26.1	25.8	28.0	27.8	28.2

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**2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013**

This section of the inventory is currently under development

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