

California Greenhouse Gas Inventory for 2000-2013
— by Category as Defined in the 2008 Scoping Plan

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

| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Transportation | 176.08 | 176.38 | 183.47 | 183.25 | 186.68 | 188.76 | 188.84 | 188.96 | 177.77 | 171.19 | 170.27 | 168.00 | 167.36 | 169.02 |
| On Road | 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 |
| Passenger Vehicles | 126.06 | 126.69 | 131.58 | 130.77 | 131.73 | 131.89 | 131.12 | 130.45 | 124.31 | 122.90 | 122.25 | 120.10 | 119.92 | 120.23 |
| Heavy Duty Trucks | 36.58 | 36.43 | 37.67 | 37.74 | 39.57 | 40.53 | 41.00 | 41.70 | 38.45 | 35.31 | 34.97 | 34.70 | 34.04 | 35.02 |
| Ships & Commercial Boats | 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 |
| Aviation (Intrastate) | 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 |
| Rail | 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 |
| Off Road [1] | 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 |
| Unspecified | 1.28 | 1.19 | 1.21 | 1.13 | 1.13 | 1.22 | 1.20 | 1.22 | 1.27 | 1.10 | 1.16 | 1.14 | 1.08 | 1.13 |
| Industrial | 97.87 | 96.35 | 97.27 | 96.08 | 98.02 | 96.01 | 94.13 | 90.81 | 91.36 | 88.79 | 92.12 | 91.97 | 92.52 | 92.68 |
| Refineries and Hydrogen Production | 28.52 | 29.10 | 29.25 | 29.89 | 29.13 | 29.80 | 29.70 | 29.26 | 28.47 | 28.34 | 30.39 | 30.12 | 29.88 | 29.27 |
| General Fuel Use | 20.25 | 19.09 | 20.32 | 16.54 | 17.07 | 16.05 | 16.01 | 14.81 | 16.05 | 15.60 | 18.03 | 19.18 | 19.07 | 19.01 |
| Natural Gas | 16.82 | 14.62 | 15.18 | 11.97 | 12.80 | 12.72 | 12.38 | 11.56 | 12.37 | 11.46 | 13.46 | 14.48 | 14.46 | 14.38 |
| Other Fuels | 3.43 | 4.46 | 5.14 | 4.57 | 4.27 | 3.33 | 3.63 | 3.25 | 3.67 | 4.14 | 4.57 | 4.70 | 4.60 | 4.63 |
| Oil & Gas Extraction [2] | 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 |
| Fuel Use | 17.53 | 17.76 | 16.51 | 19.03 | 19.20 | 17.91 | 15.75 | 15.78 | 17.03 | 15.92 | 15.01 | 14.91 | 15.50 | 16.99 |
| Fugitive Emissions | 2.29 | 2.41 | 2.40 | 2.36 | 1.87 | 1.83 | 2.32 | 2.39 | 2.40 | 2.42 | 2.44 | 2.46 | 2.56 | 2.67 |
| Cement Plants | 9.41 | 9.52 | 9.62 | 9.71 | 9.81 | 9.91 | 9.74 | 9.14 | 8.63 | 5.72 | 5.56 | 6.14 | 6.92 | 7.20 |
| Clinker Production | 5.43 | 5.52 | 5.60 | 5.68 | 5.77 | 5.85 | 5.80 | 5.55 | 5.28 | 3.60 | 3.46 | 4.08 | 4.65 | 4.93 |
| Fuel Use | 3.98 | 4.00 | 4.01 | 4.03 | 4.05 | 4.06 | 3.95 | 3.59 | 3.34 | 2.12 | 2.10 | 2.06 | 2.26 | 2.28 |
| Cogeneration Heat Output | 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 |
| Other Fugitive and Process Emissions | 8.15 | 7.99 | 8.52 | 7.96 | 8.02 | 8.09 | 8.44 | 8.26 | 8.38 | 8.23 | 8.10 | 8.02 | 7.78 | 7.73 |
| Pipelines | 3.60 | 3.68 | 4.30 | 3.76 | 3.85 | 3.88 | 4.11 | 4.00 | 4.13 | 4.20 | 4.04 | 4.03 | 3.84 | 3.82 |
| Manufacturing | 0.30 | 0.32 | 0.26 | 0.27 | 0.28 | 0.28 | 0.27 | 0.25 | 0.24 | 0.22 | 0.22 | 0.24 | 0.23 | 0.20 |
| Wastewater Treatment | 2.41 | 2.37 | 2.39 | 2.37 | 2.38 | 2.40 | 2.39 | 2.41 | 2.38 | 2.29 | 2.33 | 2.32 | 2.31 | 2.34 |
| Other | 1.85 | 1.62 | 1.57 | 1.56 | 1.51 | 1.53 | 1.67 | 1.60 | 1.63 | 1.52 | 1.50 | 1.43 | 1.40 | 1.37 |
| Electric Power | 104.85 | 122.00 | 108.64 | 112.61 | 115.20 | 107.85 | 104.53 | 113.93 | 120.14 | 101.32 | 90.30 | 88.04 | 95.09 | 90.45 |
| In-State Generation | 58.95 | 62.98 | 49.68 | 48.05 | 49.15 | 45.05 | 49.85 | 54.12 | 54.32 | 53.27 | 46.70 | 41.18 | 51.02 | 50.46 |
| Natural Gas | 50.92 | 55.46 | 42.17 | 40.92 | 42.40 | 38.11 | 43.07 | 47.12 | 48.02 | 46.08 | 40.59 | 35.92 | 45.77 | 47.04 |
| Other Fuels | 6.84 | 6.36 | 6.36 | 5.98 | 5.59 | 5.77 | 5.63 | 5.85 | 5.15 | 5.85 | 5.01 | 4.01 | 4.44 | 2.49 |
| Fugitive and Process Emissions | 1.18 | 1.16 | 1.15 | 1.15 | 1.16 | 1.16 | 1.15 | 1.16 | 1.14 | 1.34 | 1.10 | 1.25 | 0.82 | 0.92 |
| Imported Electricity | 45.90 | 59.02 | 58.96 | 64.56 | 66.04 | 62.80 | 54.68 | 59.81 | 65.82 | 48.04 | 43.59 | 46.86 | 44.07 | 39.99 |
| Unspecified Imports | 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 |
| Specified Imports | 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 |

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|--|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Commercial and Residential | 43.18 | 42.08 | 44.06 | 42.43 | 43.80 | 42.25 | 42.94 | 43.15 | 43.47 | 43.70 | 44.88 | 45.40 | 42.88 | 43.54 |
| <i>Residential Fuel Use</i> | <i>29.38</i> | <i>28.47</i> | <i>28.62</i> | <i>28.14</i> | <i>29.17</i> | <i>27.98</i> | <i>28.36</i> | <i>28.50</i> | <i>28.82</i> | <i>28.45</i> | <i>29.18</i> | <i>29.64</i> | <i>27.34</i> | <i>28.11</i> |
| Natural Gas | 27.98 | 27.38 | 27.49 | 26.62 | 27.33 | 25.93 | 26.55 | 26.68 | 26.62 | 26.26 | 26.99 | 27.51 | 25.76 | 26.52 |
| Other Fuels | 1.41 | 1.09 | 1.13 | 1.52 | 1.84 | 2.06 | 1.81 | 1.82 | 2.20 | 2.19 | 2.20 | 2.13 | 1.58 | 1.59 |
| <i>Commercial Fuel Use</i> | <i>11.47</i> | <i>11.31</i> | <i>13.11</i> | <i>12.74</i> | <i>12.70</i> | <i>12.56</i> | <i>12.84</i> | <i>12.83</i> | <i>12.94</i> | <i>12.99</i> | <i>13.42</i> | <i>13.61</i> | <i>13.41</i> | <i>13.31</i> |
| Natural Gas | 10.05 | 10.08 | 11.88 | 11.36 | 11.14 | 10.92 | 11.60 | 11.47 | 11.14 | 11.00 | 11.17 | 11.33 | 11.24 | 11.28 |
| Other Fuels | 1.42 | 1.22 | 1.23 | 1.38 | 1.56 | 1.64 | 1.24 | 1.36 | 1.80 | 1.98 | 2.25 | 2.28 | 2.16 | 2.03 |
| <i>Commercial Cogeneration Heat Output</i> | <i>1.09</i> | <i>1.05</i> | <i>1.06</i> | <i>0.26</i> | <i>0.62</i> | <i>0.40</i> | <i>0.42</i> | <i>0.49</i> | <i>0.37</i> | <i>0.92</i> | <i>0.92</i> | <i>0.78</i> | <i>0.76</i> | <i>0.72</i> |
| <i>Other Commercial and Residential</i> | <i>1.24</i> | <i>1.26</i> | <i>1.27</i> | <i>1.29</i> | <i>1.30</i> | <i>1.31</i> | <i>1.32</i> | <i>1.33</i> | <i>1.34</i> | <i>1.35</i> | <i>1.36</i> | <i>1.37</i> | <i>1.38</i> | <i>1.39</i> |
| Agriculture | 32.10 | 32.57 | 34.07 | 34.63 | 34.34 | 35.08 | 36.30 | 36.04 | 36.48 | 34.86 | 34.50 | 35.68 | 36.43 | 36.21 |
| <i>Livestock</i> | <i>19.66</i> | <i>20.44</i> | <i>21.06</i> | <i>21.63</i> | <i>21.06</i> | <i>21.81</i> | <i>22.22</i> | <i>23.73</i> | <i>24.09</i> | <i>23.88</i> | <i>23.35</i> | <i>23.38</i> | <i>23.92</i> | <i>23.92</i> |
| Enteric Fermentation (Digestive Process) | 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 |
| Manure Management | 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>Crop Growing & Harvesting</i> | <i>8.63</i> | <i>8.31</i> | <i>8.63</i> | <i>8.63</i> | <i>8.76</i> | <i>8.65</i> | <i>8.76</i> | <i>8.51</i> | <i>8.48</i> | <i>8.33</i> | <i>8.35</i> | <i>8.65</i> | <i>8.71</i> | <i>8.46</i> |
| Fertilizers | 6.59 | 6.55 | 6.66 | 6.70 | 6.58 | 6.63 | 6.57 | 6.50 | 6.55 | 6.33 | 6.36 | 6.59 | 6.63 | 6.45 |
| Soil Preparation and Disturbances | 1.96 | 1.69 | 1.91 | 1.86 | 2.11 | 1.95 | 2.12 | 1.94 | 1.86 | 1.92 | 1.91 | 1.98 | 1.99 | 1.93 |
| Crop Residue Burning | 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>General Fuel Use</i> | <i>3.81</i> | <i>3.82</i> | <i>4.38</i> | <i>4.37</i> | <i>4.52</i> | <i>4.62</i> | <i>5.32</i> | <i>3.79</i> | <i>3.91</i> | <i>2.65</i> | <i>2.81</i> | <i>3.66</i> | <i>3.80</i> | <i>3.83</i> |
| Diesel | 2.52 | 2.69 | 3.04 | 3.10 | 3.17 | 3.40 | 3.86 | 2.68 | 2.99 | 1.78 | 1.98 | 2.37 | 2.47 | 2.51 |
| Natural Gas | 0.98 | 0.75 | 0.94 | 0.85 | 0.82 | 0.70 | 0.88 | 0.79 | 0.75 | 0.69 | 0.65 | 0.66 | 0.70 | 0.69 |
| Gasoline | 0.31 | 0.38 | 0.41 | 0.41 | 0.52 | 0.52 | 0.57 | 0.32 | 0.17 | 0.17 | 0.17 | 0.63 | 0.62 | 0.63 |
| Other Fuels | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| High GWP | 7.24 | 7.55 | 8.06 | 8.79 | 9.57 | 10.34 | 10.93 | 11.60 | 12.61 | 13.83 | 15.49 | 16.78 | 17.77 | 18.50 |
| <i>Ozone Depleting Substance (ODS) Substitutes</i> | <i>6.35</i> | <i>6.82</i> | <i>7.37</i> | <i>8.10</i> | <i>8.95</i> | <i>9.75</i> | <i>10.33</i> | <i>11.04</i> | <i>12.05</i> | <i>13.38</i> | <i>15.01</i> | <i>16.11</i> | <i>17.16</i> | <i>18.02</i> |
| <i>Electricity Grid SF6 Losses [4]</i> | <i>0.33</i> | <i>0.32</i> | <i>0.30</i> | <i>0.29</i> | <i>0.30</i> | <i>0.29</i> | <i>0.28</i> | <i>0.26</i> | <i>0.27</i> | <i>0.26</i> | <i>0.24</i> | <i>0.24</i> | <i>0.23</i> | <i>0.19</i> |
| <i>Semiconductor Manufacturing [3]</i> | <i>0.57</i> | <i>0.41</i> | <i>0.38</i> | <i>0.39</i> | <i>0.32</i> | <i>0.30</i> | <i>0.32</i> | <i>0.30</i> | <i>0.30</i> | <i>0.19</i> | <i>0.24</i> | <i>0.43</i> | <i>0.37</i> | <i>0.30</i> |
| Recycling and Waste | 7.45 | 7.62 | 7.59 | 7.73 | 7.74 | 7.93 | 8.03 | 8.10 | 8.27 | 8.39 | 8.46 | 8.75 | 8.77 | 8.87 |
| <i>Landfills [3]</i> | <i>7.21</i> | <i>7.36</i> | <i>7.30</i> | <i>7.42</i> | <i>7.40</i> | <i>7.58</i> | <i>7.65</i> | <i>7.70</i> | <i>7.84</i> | <i>7.94</i> | <i>7.99</i> | <i>8.25</i> | <i>8.25</i> | <i>8.32</i> |
| <i>Composting</i> | <i>0.24</i> | <i>0.26</i> | <i>0.29</i> | <i>0.31</i> | <i>0.33</i> | <i>0.36</i> | <i>0.38</i> | <i>0.40</i> | <i>0.43</i> | <i>0.45</i> | <i>0.47</i> | <i>0.50</i> | <i>0.52</i> | <i>0.54</i> |

Total Emissions 468.77 484.56 483.16 485.52 495.34 488.23 485.69 492.60 490.10 462.07 456.02 454.61 460.82 459.28

[1] Includes equipment used in construction, mining, oil drilling, industrial and airport ground operations. [2] Reflects emissions from combustion of natural gas, diesel, and lease fuel plus fugitive emissions. [3] These categories are listed in the Industrial sector of ARB's GHG Emission Inventory sectors. [4] This category is listed in the Electric Power sector of ARB's GHG Emission Inventory sectors