

### Included Emissions

**2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018**

| Electricity Generation (In State)          | 0.10  | 0.10  | 0.10  | 0.10  | 0.09  | 0.09  | 0.09  | 0.09  | 0.09  | 0.10  | 0.09  | 0.20  | 0.24  | 0.21  | 0.21  | 0.19  | 0.18  | 0.16  | 0.18  |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| CHP: Commercial                            | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| CHP: Industrial                            | 0.04  | 0.04  | 0.04  | 0.04  | 0.03  | 0.03  | 0.03  | 0.03  | 0.03  | 0.03  | 0.03  | 0.03  | 0.03  | 0.03  | 0.03  | 0.03  | 0.02  | 0.02  | 0.01  |
| Merchant Owned                             | 0.06  | 0.06  | 0.06  | 0.06  | 0.06  | 0.05  | 0.06  | 0.06  | 0.06  | 0.06  | 0.06  | 0.12  | 0.16  | 0.13  | 0.13  | 0.12  | 0.11  | 0.10  | 0.12  |
| Utility Owned                              | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.01  | 0.01  | 0.01  | 0.01  | 0.05  | 0.05  | 0.05  | 0.05  | 0.05  | 0.05  | 0.04  | 0.04  |
| Electricity Generation (Imports)           | 0.01  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.08  | 0.07  | 0.06  | 0.05  | 0.04  | 0.04  |
| Specified Imports                          | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.02  | 0.01  | 0.01  | 0.07  | 0.07  | 0.06  | 0.04  | 0.04  | 0.03  |
| Unspecified Imports                        | 0.00  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.00  | 0.00  | 0.01  |
| Transportation                             | 0.67  | 0.64  | 0.61  | 0.59  | 0.56  | 0.52  | 0.48  | 0.45  | 0.41  | 0.38  | 0.36  | 0.33  | 0.31  | 0.29  | 0.27  | 0.26  | 0.24  | 0.22  | 0.21  |
| Aviation                                   | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Not Specified Transportation               | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Off Road                                   | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| On Road                                    | 0.66  | 0.62  | 0.60  | 0.57  | 0.55  | 0.50  | 0.47  | 0.43  | 0.39  | 0.37  | 0.35  | 0.32  | 0.30  | 0.28  | 0.26  | 0.24  | 0.22  | 0.21  | 0.19  |
| Rail                                       | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Water-borne                                | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Industrial                                 | 14.21 | 14.45 | 14.73 | 14.57 | 14.64 | 15.12 | 15.46 | 15.30 | 15.51 | 15.58 | 15.68 | 15.92 | 15.68 | 15.79 | 15.80 | 15.92 | 16.06 | 16.21 | 16.31 |
| CHP: Industrial                            | 0.03  | 0.02  | 0.02  | 0.02  | 0.03  | 0.03  | 0.03  | 0.03  | 0.03  | 0.03  | 0.02  | 0.03  | 0.03  | 0.03  | 0.03  | 0.02  | 0.02  | 0.02  | 0.02  |
| Landfills                                  | 7.47  | 7.62  | 7.55  | 7.64  | 7.62  | 7.80  | 7.86  | 7.92  | 8.08  | 8.20  | 8.30  | 8.36  | 8.27  | 8.30  | 8.35  | 8.40  | 8.47  | 8.54  | 8.63  |
| Manufacturing                              | 0.12  | 0.14  | 0.10  | 0.10  | 0.09  | 0.09  | 0.08  | 0.08  | 0.07  | 0.06  | 0.07  | 0.07  | 0.06  | 0.06  | 0.07  | 0.07  | 0.07  | 0.07  | 0.08  |
| Mining                                     | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Not Specified Industrial                   | 0.04  | 0.06  | 0.09  | 0.09  | 0.10  | 0.37  | 0.41  | 0.21  | 0.17  | 0.11  | 0.20  | 0.30  | 0.31  | 0.37  | 0.34  | 0.36  | 0.45  | 0.47  | 0.51  |
| Oil & Gas: Production & Processing         | 1.43  | 1.48  | 1.49  | 1.51  | 1.53  | 1.49  | 1.60  | 1.62  | 1.67  | 1.65  | 1.61  | 1.63  | 1.62  | 1.66  | 1.66  | 1.64  | 1.61  | 1.62  | 1.57  |
| Petroleum Marketing                        | 0.01  | 0.01  | 0.01  | 0.01  | 0.00  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.01  | 0.01  | 0.00  |
| Petroleum Refining and Hydrogen Production | 0.13  | 0.10  | 0.10  | 0.09  | 0.08  | 0.09  | 0.09  | 0.09  | 0.08  | 0.10  | 0.08  | 0.14  | 0.10  | 0.07  | 0.06  | 0.07  | 0.06  | 0.08  | 0.06  |
| Solid Waste Treatment                      | 0.09  | 0.10  | 0.11  | 0.12  | 0.13  | 0.14  | 0.14  | 0.15  | 0.16  | 0.17  | 0.18  | 0.19  | 0.20  | 0.21  | 0.21  | 0.22  | 0.23  | 0.24  | 0.25  |
| Transmission and Distribution              | 3.63  | 3.69  | 4.02  | 3.78  | 3.85  | 3.89  | 4.03  | 4.00  | 4.07  | 4.11  | 4.07  | 4.07  | 3.97  | 3.98  | 3.99  | 4.05  | 4.06  | 4.09  | 4.08  |
| Wastewater Treatment                       | 1.26  | 1.24  | 1.25  | 1.22  | 1.21  | 1.21  | 1.20  | 1.20  | 1.17  | 1.15  | 1.14  | 1.13  | 1.12  | 1.11  | 1.09  | 1.07  | 1.07  | 1.06  | 1.11  |
| Commercial                                 | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  |
| CHP: Commercial                            | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Communication                              | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Domestic Utilities                         | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Education                                  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Food Services                              | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Health Care                                | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Hotels                                     | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| National Security                          | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Not Specified Commercial                   | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  |

## California Methane Inventory for 2000-2018 — by Sector and Activity

*million tonnes of CO2 equivalent - (based upon IPCC Fourth Assessment Report's 100-yr Global Warming Potentials)*

Methane

| Included Emissions                    | 2000         | 2001         | 2002         | 2003         | 2004         | 2005         | 2006         | 2007         | 2008         | 2009         | 2010         | 2011         | 2012         | 2013         | 2014         | 2015         | 2016         | 2017         | 2018         |
|---------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Offices                               | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         |
| Retail & Wholesale                    | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         |
| Transportation Services               | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         |
| <b>Residential</b>                    | <b>0.82</b>  | <b>0.83</b>  | <b>0.84</b>  | <b>0.85</b>  | <b>0.86</b>  | <b>0.86</b>  | <b>0.87</b>  | <b>0.88</b>  | <b>0.89</b>  | <b>0.90</b>  | <b>0.92</b>  | <b>0.92</b>  | <b>0.91</b>  | <b>0.92</b>  | <b>0.92</b>  | <b>0.92</b>  | <b>0.92</b>  | <b>0.92</b>  | <b>0.93</b>  |
| Household Use                         | 0.04         | 0.04         | 0.04         | 0.04         | 0.05         | 0.04         | 0.03         | 0.03         | 0.04         | 0.04         | 0.05         | 0.05         | 0.04         | 0.05         | 0.05         | 0.03         | 0.03         | 0.03         | 0.03         |
| Transmission and Distribution         | 0.78         | 0.79         | 0.79         | 0.80         | 0.81         | 0.83         | 0.84         | 0.85         | 0.85         | 0.85         | 0.87         | 0.87         | 0.87         | 0.88         | 0.88         | 0.89         | 0.89         | 0.89         | 0.90         |
| <b>Agriculture &amp; Forestry</b>     | <b>18.48</b> | <b>18.74</b> | <b>19.93</b> | <b>20.37</b> | <b>19.66</b> | <b>20.32</b> | <b>20.47</b> | <b>22.93</b> | <b>22.77</b> | <b>22.18</b> | <b>22.77</b> | <b>22.67</b> | <b>23.21</b> | <b>22.33</b> | <b>22.55</b> | <b>21.89</b> | <b>22.03</b> | <b>22.08</b> | <b>22.13</b> |
| Ag Energy Use                         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         |
| Ag Residue Burning                    | 0.03         | 0.02         | 0.02         | 0.02         | 0.02         | 0.02         | 0.02         | 0.02         | 0.03         | 0.03         | 0.03         | 0.03         | 0.03         | 0.03         | 0.03         | 0.03         | 0.03         | 0.03         | 0.03         |
| Enteric Fermentation                  | 9.86         | 9.76         | 10.39        | 10.47        | 10.25        | 10.55        | 10.60        | 11.71        | 11.46        | 11.10        | 11.55        | 11.40        | 11.52        | 11.22        | 11.28        | 10.95        | 10.93        | 11.14        | 11.13        |
| Manure Management                     | 7.88         | 8.23         | 8.76         | 9.06         | 8.60         | 8.89         | 9.13         | 10.25        | 10.56        | 10.26        | 10.38        | 10.38        | 10.84        | 10.23        | 10.46        | 10.23        | 10.17        | 10.27        | 10.22        |
| Rice Cultivation                      | 0.70         | 0.73         | 0.76         | 0.81         | 0.79         | 0.86         | 0.71         | 0.94         | 0.71         | 0.80         | 0.81         | 0.85         | 0.83         | 0.86         | 0.78         | 0.67         | 0.89         | 0.65         | 0.75         |
| <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>  | <b>2014</b>  | <b>2015</b>  | <b>2016</b>  | <b>2017</b>  | <b>2018</b>  |
| California CH4 Emissions              | 34.3         | 34.8         | 36.2         | 36.5         | 35.8         | 36.9         | 37.4         | 39.7         | 39.7         | 39.2         | 39.9         | 40.1         | 40.4         | 39.6         | 39.8         | 39.2         | 39.5         | 39.7         | 39.8         |

## California Methane Inventory for 2000-2018 — by Sector and Activity

*million tonnes of CO2 equivalent - (based upon IPCC Fourth Assessment Report's 100-yr Global Warming Potentials)*

Methane

| Excluded Emissions                                | 2000        | 2001        | 2002        | 2003        | 2004        | 2005        | 2006        | 2007        | 2008        | 2009        | 2010        | 2011        | 2012        | 2013        | 2014        | 2015        | 2016        | 2017        | 2018        |
|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Transportation</b>                             | <b>0.02</b> | <b>0.02</b> | <b>0.02</b> | <b>0.02</b> | <b>0.02</b> | <b>0.02</b> | <b>0.02</b> | <b>0.02</b> | <b>0.02</b> | <b>0.02</b> | <b>0.02</b> | <b>0.02</b> | <b>0.02</b> | <b>0.02</b> | <b>0.01</b> | <b>0.02</b> | <b>0.02</b> | <b>0.02</b> | <b>0.02</b> |
| <i>Aviation</i>                                   | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        |
| <i>Water-borne</i>                                | 0.02        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.02        | 0.02        | 0.02        | 0.02        | 0.02        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        |
| <b>Industrial</b>                                 | <b>2.75</b> | <b>2.74</b> | <b>2.75</b> | <b>2.75</b> | <b>2.76</b> | <b>2.77</b> | <b>2.79</b> | <b>2.82</b> | <b>2.82</b> | <b>2.81</b> | <b>2.80</b> | <b>2.80</b> | <b>2.80</b> | <b>2.77</b> | <b>2.79</b> | <b>2.79</b> | <b>2.79</b> | <b>2.79</b> | <b>2.79</b> |
| <i>Oil &amp; Gas: Production &amp; Processing</i> | 2.75        | 2.74        | 2.75        | 2.75        | 2.76        | 2.77        | 2.79        | 2.82        | 2.82        | 2.81        | 2.80        | 2.80        | 2.80        | 2.77        | 2.79        | 2.79        | 2.79        | 2.79        | 2.79        |
| <b>Military</b>                                   | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> |
| <i>Not Specified Military</i>                     | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        |
| <b>Summary for Excluded Emissions</b>             | <b>2.00</b> | <b>2.01</b> | <b>2.02</b> | <b>2.03</b> | <b>2.04</b> | <b>2.05</b> | <b>2.06</b> | <b>2.07</b> | <b>2.08</b> | <b>2.09</b> | <b>2.10</b> | <b>2.11</b> | <b>2.12</b> | <b>2.13</b> | <b>2.14</b> | <b>2.15</b> | <b>2.16</b> | <b>2.17</b> | <b>2.18</b> |
| International and Interstate CH4 Emissions        | 2.8         | 2.8         | 2.8         | 2.8         | 2.8         | 2.8         | 2.8         | 2.8         | 2.8         | 2.8         | 2.8         | 2.8         | 2.8         | 2.8         | 2.8         | 2.8         | 2.8         | 2.8         | 2.8         |

**Other Emissions**

**2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018**

This section of the inventory is currently under development

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