

California Greenhouse Gas Inventory for 2000-2016 — by IPCC Category
million tonnes of CO2 equivalent - (based upon IPCC Fourth Assessment Report's 100-yr Global Warming Potentials)

Included Emissions	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
1 - Energy	413.7	428.8	425.4	424.2	432.3	423.0	418.2	423.1	419.9	392.4	381.0	372.2	376.4	375.2	369.6	366.3	352.3
1A - Fuel Combustion Activities	406.32	421.38	417.72	416.81	424.82	415.40	410.46	415.37	412.18	384.49	373.24	364.26	369.04	367.33	361.59	358.00	343.79
1A1 - Energy Industries	159.12	175.95	161.56	167.81	172.76	163.91	157.64	165.74	171.53	154.35	144.85	137.10	144.24	141.87	139.95	132.63	115.11
1A1a - Main Activity Electricity and Heat Production	116.37	132.29	119.12	122.23	127.49	119.41	115.87	124.33	129.70	113.42	102.69	98.70	105.81	100.40	97.51	92.05	75.87
1A1ai - Electricity Generation	84.804	103.488	86.517	92.858	98.058	91.186	88.839	98.216	104.626	84.201	75.849	72.107	81.080	75.019	72.533	69.650	55.219
1A1aii - Combined Heat and Power Generation (CHP)	31.565	28.804	32.600	29.375	29.427	28.227	27.034	26.115	25.072	29.215	26.842	26.597	24.727	25.383	24.979	22.399	20.649
1A1b - Petroleum Refining	24.67	25.23	25.33	26.03	25.31	25.93	25.57	25.06	24.28	24.59	26.54	22.85	22.80	23.85	23.95	22.35	22.57
1A1c - Manufacture of Solid Fuels and Other Energy Industries	18.09	18.43	17.11	19.55	19.96	18.56	16.19	16.35	17.56	16.35	15.61	15.54	15.64	17.62	18.48	18.24	16.67
1A1cii - Other Energy Industries	18.085	18.429	17.109	19.545	19.964	18.563	16.192	16.353	17.557	16.350	15.610	15.544	15.636	17.621	18.485	18.235	16.670
1A2 - Manufacturing Industries and Construction	22.75	21.58	22.90	19.28	19.52	18.63	18.71	17.01	18.11	16.62	18.72	19.54	19.78	20.29	20.22	19.86	19.21
1A2c - Chemicals	4.55	4.08	3.97	2.60	3.22	3.81	3.79	3.13	3.91	3.82	5.36	6.32	5.71	5.67	6.47	6.02	6.23
1A2d - Pulp, Paper and Print	1.05	0.94	1.01	0.92	0.94	0.62	0.64	0.55	0.46	0.40	0.40	0.44	0.44	0.43	0.41	0.44	0.45
1A2e - Food Processing, Beverages and Tobacco	3.89	3.51	3.80	3.12	3.16	3.02	3.31	3.32	3.18	3.12	3.08	3.16	3.26	3.27	3.30	3.32	3.29
1A2f - Non-Metallic Minerals	5.42	5.28	5.47	5.29	5.27	5.32	5.32	4.78	4.34	2.94	2.90	2.86	3.07	3.05	3.12	3.20	3.23
1A2g - Transport Equipment	0.46	0.48	0.52	0.31	0.27	0.27	0.26	0.28	0.29	0.25	0.25	0.24	0.24	0.28	0.27	0.27	0.28
1A2h - Machinery	1.75	1.27	1.33	0.98	1.01	1.02	1.04	0.99	0.93	0.82	0.80	0.82	0.81	0.79	0.77	0.76	0.76
1A2i - Mining (excluding fuels) and Quarrying	0.86	0.31	0.31	0.34	0.36	0.34	0.11	0.16	0.19	0.14	0.15	0.15	0.17	0.16	0.15	0.15	0.16
1A2j - Wood and Wood Products	0.40	0.31	0.19	0.16	0.11	0.11	0.11	0.08	0.07	0.05	0.05	0.04	0.03	0.03	0.04	0.04	0.04
1A2k - Construction	0.41	0.60	0.62	0.62	0.75	0.72	0.60	0.48	0.42	0.41	0.48	0.47	0.64	1.26	0.71	0.33	0.21
1A2l - Textile and Leather	0.56	0.54	0.59	0.45	0.44	0.43	0.39	0.35	0.31	0.23	0.24	0.23	0.22	0.22	0.21	0.20	0.20
1A2m - Non-specified Industry.	2.60	3.46	4.17	3.75	3.27	2.36	2.70	2.36	3.49	4.08	4.55	4.32	4.67	4.60	4.24	4.67	3.86
1A3 - Transport	179.78	180.25	187.15	184.48	186.17	187.73	187.61	187.51	176.64	169.55	164.12	160.61	160.40	160.03	161.37	165.15	168.39
1A3a - Civil Aviation	4.21	4.02	4.17	4.25	4.49	4.49	4.56	4.97	4.50	4.03	3.84	3.73	3.75	3.93	3.90	4.22	4.44
1A3aii - Domestic Aviation	3.949	3.781	3.895	3.983	4.254	4.281	4.360	4.755	4.318	3.883	3.717	3.630	3.601	3.787	3.733	4.030	4.353
1A3b - Road Transportation	164.76	165.30	171.57	168.36	169.41	170.20	169.64	169.64	159.79	155.07	151.20	148.03	147.71	147.07	148.04	151.52	154.64
1A3bi - Cars	69.046	67.672	69.230	64.911	63.421	61.818	60.945	60.295	56.921	56.664	55.178	53.964	54.534	54.884	55.144	57.478	58.508
1A3bii - Light-duty Trucks	55.836	57.795	61.101	62.279	63.017	64.102	63.991	63.787	60.699	59.505	57.717	56.134	55.960	55.382	55.738	57.344	58.939
1A3biii - Heavy-duty Trucks and Buses	39.513	39.371	40.730	40.607	42.368	43.335	43.684	44.449	40.998	37.684	37.071	36.651	35.932	35.545	35.835	35.188	35.615
1A3biv - Motorcycles	0.243	0.316	0.362	0.380	0.392	0.430	0.478	0.509	0.530	0.519	0.494	0.483	0.486	0.484	0.486	0.511	0.520
1A3c - Railways	2.53	2.58	2.66	2.80	2.91	3.03	3.11	2.88	2.61	2.14	2.24	2.38	2.38	2.38	2.38	2.38	2.37
1A3d - Water-borne Navigation	4.86	4.75	5.14	5.38	5.46	5.79	5.93	6.02	5.78	5.25	3.66	3.52	3.43	3.42	3.49	3.42	3.24
1A3di - International Water-borne Navigation (International Bunkers)	1.982	2.079	2.181	2.287	2.398	2.514	2.616	2.661	2.560	2.227	1.352	1.327	1.220	1.240	1.291	1.276	1.316
1A3dii - Domestic Water-borne Navigation	2.883	2.675	2.957	3.088	3.063	3.278	3.309	3.356	3.218	3.025	2.309	2.189	2.214	2.179	2.196	2.145	1.920
1A3e - Other Transportation	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	2.43	2.53	2.63
1A3eii - Off-road	2.631	2.790	2.768	2.843	3.029	3.217	3.315	3.176	2.819	2.246	2.033	2.133	2.234	2.334	2.434	2.533	2.633
1A4 - Other Sectors	44.67	43.60	46.11	45.23	46.37	45.14	46.50	45.11	45.90	43.97	45.55	47.01	44.62	45.14	40.05	40.35	41.08
1A4a - Commercial/Institutional	11.47	11.31	13.11	12.84	12.70	12.55	12.83	12.82	12.99	12.89	13.58	13.71	13.41	13.30	12.51	12.67	12.92

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Included Emissions	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
1A4b - Residential	29.38	28.47	28.62	28.14	29.17	27.98	28.36	28.50	28.82	28.47	29.19	29.64	27.34	28.14	22.87	23.29	24.20
1A4c - Agriculture/Forestry/Fishing/Fish Farms	3.81	3.82	4.38	4.25	4.50	4.60	5.30	3.78	4.09	2.61	2.77	3.65	3.88	3.71	4.66	4.39	3.95
1B - Fugitive Emissions from Fuels	7.39	7.42	7.69	7.41	7.48	7.60	7.72	7.68	7.75	7.88	7.80	7.97	7.36	7.84	8.06	8.30	8.49
1B1 - Solid Fuels	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.01
1B2 - Oil and Natural Gas	6.12	6.16	6.44	6.17	6.22	6.33	6.47	6.42	6.53	6.44	6.61	6.67	6.49	6.89	7.11	7.13	6.96
1B2a - Oil	0.48	0.46	0.47	0.46	0.44	0.46	0.48	0.47	0.46	0.45	0.49	0.52	0.47	0.61	0.64	0.54	0.44
1B2ai - Venting	0.067	0.069	0.069	0.071	0.069	0.071	0.073	0.072	0.071	0.066	0.053	0.072	0.061	0.160	0.214	0.151	0.152
1B2aii - Flaring	0.057	0.058	0.058	0.059	0.058	0.060	0.061	0.061	0.060	0.055	0.055	0.128	0.106	0.104	0.093	0.085	0.032
1B2aiii - All Other	0.358	0.331	0.338	0.330	0.315	0.334	0.341	0.338	0.330	0.324	0.377	0.322	0.305	0.343	0.337	0.303	0.256
1B2b - Natural Gas [1]	3.64	3.70	4.03	3.78	3.85	3.89	4.03	4.00	4.08	4.12	4.08	4.07	3.98	3.98	4.00	4.06	4.06
1B3 - Geothermal Energy Production	1.13	1.11	1.11	1.10	1.12	1.12	1.10	1.11	1.09	1.31	1.10	1.22	0.83	0.93	0.92	1.15	1.51
1B4 - Pollution control devices	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.10	0.10	0.06	0.05	0.02	0.00	0.00	0.00	0.00
2 - Industrial Processes and Product Use	19.7	19.4	20.3	20.8	21.7	22.4	23.4	24.1	24.3	22.6	23.9	28.7	30.0	29.7	31.2	33.0	35.0
2A - Mineral Industry	5.60	5.35	5.88	5.93	6.11	6.04	5.88	5.71	5.33	3.63	3.49	4.11	4.69	4.97	5.32	5.23	5.21
2A1 - Cement Production	5.52	5.28	5.82	5.87	6.03	5.96	5.81	5.66	5.28	3.60	3.46	4.08	4.65	4.93	5.27	5.17	5.15
2A2 - Lime Production	0.07	0.07	0.06	0.06	0.08	0.07	0.07	0.05	0.04	0.03	0.03	0.04	0.04	0.04	0.05	0.06	0.06
2B - Chemical Industry	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.05	0.04	0.05	0.03	0.05	0.05	0.01	0.03	0.00
2B2 - Nitric Acid Production	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.05	0.04	0.05	0.03	0.05	0.05	0.01	0.03	0.00
2C - Metal Industry	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.07	0.07	0.06	0.07	0.06	0.05	0.00
2C5 - Lead Production	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.07	0.07	0.06	0.07	0.06	0.05	0.00
2D - Non-Energy Products from Fuels and Solvent Use	3.30	2.99	2.83	2.73	2.65	2.66	2.61	2.65	2.50	2.27	2.47	2.35	2.22	2.30	2.37	2.51	2.52
2D1 - Lubricant Use	2.09	1.92	1.89	1.75	1.77	1.77	1.72	1.78	1.65	1.48	1.65	1.56	1.44	1.52	1.59	1.73	1.73
2D3 - Solvent Use	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	0.77	0.78	0.79	0.79
2E - Electronics Industry	0.20	0.14	0.12	0.14	0.14	0.14	0.14	0.10	0.08	0.06	0.08	0.08	0.06	0.08	0.14	0.14	0.16
2F - Product Uses as Substitutes for Ozone Depleting Substances	5.62	6.01	6.52	7.20	7.95	8.75	9.64	10.43	11.27	11.96	13.20	14.21	15.25	16.38	17.42	18.37	19.24
2G - Other Product Manufacture and Use	1.52	1.42	1.45	1.38	1.39	1.37	1.39	1.39	1.38	1.28	1.20	1.16	1.12	1.14	1.17	1.41	1.37
2G1 - Electrical Equipment	0.51	0.49	0.44	0.42	0.40	0.37	0.33	0.29	0.30	0.27	0.24	0.25	0.24	0.18	0.14	0.42	0.37
2G1b - Use of Electrical Equipment	0.51	0.49	0.44	0.42	0.40	0.37	0.33	0.29	0.30	0.27	0.24	0.25	0.24	0.18	0.14	0.42	0.37
2G4 - CO ₂ , Limestone or Soda Ash consumption	1.01	0.93	1.00	0.96	0.99	1.00	1.06	1.10	1.08	1.01	0.96	0.91	0.88	0.95	1.03	0.99	1.00
2H - Other	3.31	3.35	3.39	3.33	3.31	3.34	3.58	3.67	3.67	3.27	3.36	6.68	6.54	4.69	4.73	5.26	6.52
2H3 - Hydrogen Production	3.31	3.35	3.39	3.33	3.31	3.34	3.58	3.67	3.67	3.27	3.36	6.68	6.54	4.69	4.73	5.26	6.52

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Included Emissions	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
3 - Agriculture, Forestry and Other Land Use	29.0	29.2	30.7	31.2	30.2	31.0	31.4	33.3	33.0	32.2	32.9	32.6	33.6	32.3	32.7	31.4	31.3
3A - Livestock	19.62	19.89	21.17	21.61	20.81	21.46	21.81	24.13	24.13	23.41	24.00	23.84	24.47	23.49	23.81	23.10	22.99
3A1 - Enteric Fermentation	10.36	10.25	10.91	11.00	10.77	11.08	11.13	12.31	12.04	11.65	12.13	11.98	12.10	11.78	11.85	11.40	11.35
3A1a - Cattle	10.01	9.89	10.54	10.60	10.34	10.60	10.66	11.84	11.57	11.17	11.65	11.49	11.61	11.29	11.36	10.91	10.87
3A1ai - Dairy Cows	6.743	6.665	7.331	7.417	7.217	7.392	7.547	8.461	8.360	7.995	8.496	8.436	8.488	8.225	8.240	8.048	8.003
3A1aii - Other Cattle	3.264	3.221	3.210	3.185	3.125	3.212	3.110	3.376	3.210	3.173	3.154	3.054	3.121	3.070	3.124	2.867	2.867
3A1c - Sheep	0.16	0.16	0.15	0.15	0.14	0.14	0.13	0.12	0.12	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12
3A1d - Goats	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
3A1f - Horses	0.18	0.19	0.20	0.24	0.27	0.31	0.32	0.32	0.32	0.33	0.34	0.35	0.35	0.35	0.35	0.35	0.35
3A1h - Swine	0.01	0.00	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
3A2 - Manure Management	9.26	9.64	10.25	10.60	10.04	10.39	10.68	11.82	12.09	11.75	11.86	11.86	12.38	11.71	11.96	11.70	11.64
3A2a - Cattle	8.88	9.28	9.88	10.24	9.69	10.02	10.33	11.46	11.77	11.41	11.53	11.52	12.04	11.40	11.67	11.41	11.35
3A2ai - Dairy Cows	8.541	8.931	9.504	9.837	9.308	9.625	9.907	11.033	11.354	11.016	11.142	11.140	11.644	11.003	11.244	10.982	10.921
3A2aii - Other Cattle	0.342	0.345	0.372	0.399	0.381	0.398	0.418	0.424	0.414	0.396	0.385	0.382	0.396	0.395	0.426	0.425	0.426
3A2c - Sheep	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03
3A2d - Goats	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
3A2f - Horses	0.06	0.07	0.07	0.08	0.08	0.09	0.09	0.09	0.08	0.08	0.09	0.09	0.09	0.09	0.09	0.09	0.09
3A2h - Swine	0.06	0.05	0.06	0.06	0.06	0.06	0.06	0.07	0.04	0.05	0.04	0.05	0.05	0.04	0.05	0.04	0.04
3A2i - Poultry	0.21	0.21	0.20	0.19	0.17	0.17	0.17	0.18	0.17	0.17	0.17	0.17	0.17	0.14	0.12	0.13	0.13
3C - Aggregate Sources and Non-CO2 Emissions Sources on Land	9.40	9.28	9.54	9.55	9.41	9.51	9.62	9.19	8.91	8.83	8.86	8.77	9.11	8.82	8.89	8.33	8.32
3C1 - Emissions from Biomass Burning	0.08	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
3C1b - Biomass Burning in Croplands	0.08	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
3C2 - Liming	0.27	0.16	0.23	0.24	0.24	0.30	0.48	0.26	0.17	0.17	0.18	0.17	0.23	0.22	0.21	0.19	0.18
3C4 - Direct N2O Emissions from Managed Soils	6.42	6.45	6.59	6.57	6.44	6.42	6.39	6.15	6.01	5.92	5.99	5.85	6.08	5.78	5.91	5.49	5.51
3C5 - Indirect N2O Emissions from Managed Soils	1.81	1.79	1.83	1.85	1.82	1.84	1.84	1.81	1.80	1.80	1.79	1.80	1.85	1.83	1.81	1.75	1.71
3C7 - Rice Cultivations	0.83	0.81	0.82	0.83	0.85	0.88	0.85	0.90	0.85	0.87	0.83	0.87	0.88	0.90	0.88	0.83	0.83
4 - Waste	9.3	9.4	9.4	9.5	9.5	9.7	9.8	9.9	10.0	10.2	10.3	10.4	10.4	10.4	10.5	10.7	10.7
4A - Solid Waste Disposal	7.22	7.36	7.31	7.43	7.42	7.59	7.65	7.71	7.88	8.02	8.11	8.19	8.20	8.22	8.28	8.40	8.47
4A1 - Managed Waste Disposal Sites	7.22	7.36	7.31	7.43	7.42	7.59	7.65	7.71	7.88	8.02	8.11	8.19	8.20	8.22	8.28	8.40	8.47
4B - Biological Treatment of Solid Waste	0.13	0.15	0.16	0.17	0.18	0.20	0.21	0.22	0.24	0.25	0.26	0.27	0.29	0.30	0.31	0.33	0.34
4D - Wastewater Treatment and Discharge	1.93	1.91	1.93	1.91	1.92	1.91	1.91	1.93	1.90	1.88	1.94	1.92	1.92	1.92	1.94	1.92	1.92
4D1 - Domestic Wastewater Treatment and Discharge	1.60	1.59	1.60	1.59	1.59	1.58	1.59	1.59	1.58	1.57	1.63	1.61	1.61	1.61	1.63	1.62	1.62
4D2 - Industrial Wastewater Treatment and Discharge	0.33	0.31	0.34	0.32	0.32	0.32	0.33	0.34	0.32	0.31	0.31	0.31	0.31	0.31	0.30	0.30	0.30



California Greenhouse Gas Inventory for 2000-2016 — by IPCC Category

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

Included Emissions	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Summary for Included Emissions	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Included Inventory Emissions	471.7	486.8	485.8	485.7	493.7	486.1	482.7	490.3	487.3	457.3	448.1	443.9	450.4	447.6	444.1	441.4	429.4

[1] The exceptional Aliso Canyon natural gas leak event released 1.96 MMTCO₂e of unanticipated emissions in calendar year 2015 and an additional 0.53 MMTCO₂e in 2016. These emissions will be mitigated in the future according to legal settlement and are presented alongside but tracked separately from routine inventory emissions

California Greenhouse Gas Inventory for 2000-2016 — by IPCC Category

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

Excluded Emissions	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
1 - Energy	56.9	51.1	55.7	50.0	54.1	56.1	58.4	61.3	57.9	56.6	58.6	54.0	51.8	50.5	50.6	55.3	59.3
1A - Fuel Combustion Activities	54.11	48.34	52.93	47.26	51.33	53.31	55.63	58.47	55.07	53.80	55.84	51.18	49.03	47.73	47.83	52.48	56.53
1A3 - Transport	50.30	43.98	48.81	43.10	47.44	49.90	52.51	55.54	52.29	51.10	52.74	48.50	45.73	45.05	44.53	49.72	54.21
1A3a - Civil Aviation	35.12	32.55	35.14	33.80	36.18	35.84	36.79	38.44	34.87	34.20	33.50	34.26	32.70	35.21	37.65	40.42	42.64
1A3ai - International Aviation (International Bunkers)	16.763	15.194	15.701	14.555	15.779	16.187	16.830	17.546	16.619	16.468	16.203	17.179	16.445	18.096	19.852	21.955	23.161
1A3aia - International Aviation (International Bunkers)	16.763	15.194	15.701	14.555	15.779	16.187	16.830	17.546	16.619	16.468	16.203	17.179	16.445	18.096	19.852	21.955	23.161
1A3aib - Domestic Aviation	18.356	17.359	19.441	19.245	20.396	19.650	19.958	20.899	18.250	17.733	17.297	17.078	16.253	17.110	17.799	18.463	19.477
1A3d - Water-borne Navigation	15.18	11.43	13.67	9.30	11.27	14.06	15.73	17.09	17.42	16.90	19.24	14.24	13.03	9.85	6.88	9.30	11.57
1A3di - International Water-borne Navigation (International Bunkers)	15.180	11.427	13.666	9.299	11.268	14.063	15.726	17.094	17.421	16.895	19.239	14.241	13.035	9.846	6.880	9.296	11.568
1A5 - Non-Specified	3.81	4.36	4.13	4.16	3.88	3.41	3.11	2.93	2.77	2.71	3.10	2.68	3.30	2.68	3.30	2.76	2.32
1A5b - Mobile	3.74	4.07	3.64	3.66	3.34	3.31	3.00	2.81	2.68	2.56	2.58	2.31	2.87	2.17	2.12	2.15	2.15
1A5bi - Mobile (Aviation Component)	3.736	4.069	3.640	3.661	3.338	3.313	3.004	2.807	2.682	2.562	2.584	2.308	2.874	2.171	2.123	2.151	2.148
1B - Fugitive Emissions from Fuels	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
1B2 - Oil and Natural Gas	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
Summary for Excluded Emissions	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
International and Interstate Emissions	56.9	51.1	55.7	50.0	54.1	56.1	58.4	61.3	57.9	56.6	58.6	54.0	51.8	50.5	50.6	55.3	59.3

California Greenhouse Gas Inventory for 2000-2016 — by IPCC Category

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CO2 from biogenic materials	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
1 - Energy	16.6	16.8	15.2	18.2	19.8	19.4	19.1	19.0	19.2	21.1	23.3	25.1	25.2	29.3	29.0	27.1	29.1
1A - Fuel Combustion Activities	16.56	16.85	15.23	18.16	19.83	19.36	19.10	18.98	19.21	21.07	23.30	25.09	25.18	29.27	28.99	27.06	29.06
1A1 - Energy Industries	8.39	8.21	8.02	8.22	8.09	8.50	8.65	8.31	8.30	9.45	9.17	10.03	10.92	12.00	11.51	9.99	9.92
1A1a - Main Activity Electricity and Heat Production	8.39	8.21	8.02	8.22	8.09	8.50	8.65	8.31	8.30	9.45	9.17	10.03	10.92	12.00	11.51	9.99	9.92
1A1ai - Electricity Generation	5.249	4.790	5.687	5.638	5.414	5.530	5.670	5.343	5.513	7.180	7.143	7.373	8.263	9.164	8.951	7.748	7.178
1A1aii - Combined Heat and Power Generation (CHP)	3.137	3.419	2.338	2.581	2.679	2.966	2.983	2.968	2.783	2.266	2.023	2.654	2.656	2.834	2.555	2.237	2.742
1A1b - Petroleum Refining	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
1A2 - Manufacturing Industries and Construction	3.78	4.26	2.64	2.60	2.65	2.91	2.66	2.71	2.42	2.24	2.35	2.54	2.56	2.48	2.22	2.02	2.02
1A2f - Non-Metallic Minerals	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	0.23	0.15	0.21
1A2k - Construction	0.00	0.00	0.00	0.01	0.02	0.02	0.02	0.01	0.01	0.01	0.03	0.03	0.04	0.08	0.05	0.02	0.01
1A2m - Non-specified Industry.	3.72	4.20	2.58	2.52	2.56	2.82	2.59	2.64	2.35	2.16	2.22	2.42	2.37	2.21	1.94	1.85	1.80
1A3 - Transport	0.34	0.46	0.57	3.14	4.79	5.11	5.24	5.18	5.41	5.38	8.23	8.88	8.32	10.25	10.71	11.45	13.53
1A3a - Civil Aviation	0.00	0.00	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
1A3b - Road Transportation	0.34	0.46	0.57	3.12	4.77	5.08	5.21	5.15	5.38	5.35	8.19	8.84	8.28	10.20	10.66	11.41	13.51
1A3bi - Cars	0.161	0.213	0.256	1.439	2.161	2.254	2.225	2.200	2.318	2.353	3.636	3.897	3.636	3.858	4.184	4.137	4.127
1A3bii - Light-duty Trucks	0.130	0.182	0.226	1.384	2.153	2.344	2.341	2.332	2.476	2.474	3.806	4.055	3.729	3.883	4.220	4.115	4.152
1A3biii - Heavy-duty Trucks and Buses	0.047	0.061	0.084	0.290	0.441	0.467	0.633	0.603	0.566	0.501	0.716	0.862	0.882	2.432	2.219	3.122	5.199
1A3biv - Motorcycles	0.001	0.001	0.001	0.008	0.012	0.014	0.016	0.017	0.019	0.019	0.029	0.031	0.029	0.030	0.033	0.032	0.032
1A3d - Water-borne Navigation	0.00	0.00	0.00	0.01	0.02	0.02	0.02	0.02	0.02	0.03	0.04	0.03	0.04	0.04	0.04	0.03	0.01
1A3dii - Domestic Water-borne Navigation	0.002	0.001	0.002	0.015	0.019	0.025	0.023	0.024	0.024	0.026	0.037	0.032	0.036	0.037	0.039	0.033	0.014
1A4 - Other Sectors	4.05	3.92	3.99	4.20	4.28	2.84	2.54	2.78	3.08	4.00	3.56	3.63	3.38	4.54	4.55	3.60	3.59
1A4a - Commercial/Institutional	0.58	0.59	0.60	0.63	0.61	0.39	0.36	0.39	0.41	0.50	0.49	0.47	0.42	0.48	0.48	0.54	0.54
1A4b - Residential	3.47	3.33	3.38	3.56	3.65	2.43	2.15	2.38	2.66	3.50	3.05	3.12	2.91	4.02	4.02	3.05	3.05
1A4c - Agriculture/Forestry/Fishing/Fish Farms	0.00	0.00	0.00	0.01	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.04	0.05	0.03	0.04	0.01	0.00
3 - Agriculture, Forestry and Other Land Use	1.4	1.2	1.2	1.2	1.2	1.2	1.2	1.3	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.6
3C - Aggregate Sources and Non-CO2 Emissions Sources on Land	1.39	1.16	1.17	1.20	1.21	1.20	1.22	1.28	1.38	1.41	1.44	1.49	1.49	1.52	1.47	1.49	1.55
3C1 - Emissions from Biomass Burning	1.39	1.16	1.17	1.20	1.21	1.20	1.22	1.28	1.38	1.41	1.44	1.49	1.49	1.52	1.47	1.49	1.55
3C1b - Biomass Burning in Croplands	1.39	1.16	1.17	1.20	1.21	1.20	1.22	1.28	1.38	1.41	1.44	1.49	1.49	1.52	1.47	1.49	1.55
4 - Waste	7.1	7.5	7.8	7.9	8.0	8.3	8.5	8.7	8.9	9.1	9.3	9.4	9.6	9.7	9.8	10.0	10.1
4A - Solid Waste Disposal	6.28	6.62	6.88	6.86	6.90	7.08	7.28	7.39	7.47	7.57	7.68	7.73	7.87	7.91	7.95	8.00	8.05
4A1 - Managed Waste Disposal Sites	6.28	6.62	6.88	6.86	6.90	7.08	7.28	7.39	7.47	7.57	7.68	7.73	7.87	7.91	7.95	8.00	8.05
4B - Biological Treatment of Solid Waste	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	1.88	1.96	2.04

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CO2 from biogenic materials	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Summary for CO2 from biogenic materials	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Carbon dioxide from Biogenic sources	25.0	25.5	24.2	27.3	29.0	28.8	28.9	29.0	29.5	31.5	34.0	36.0	36.3	40.5	40.3	38.5	40.7

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Forested Lands & Wood Products**2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016**

This section of the inventory is currently under development