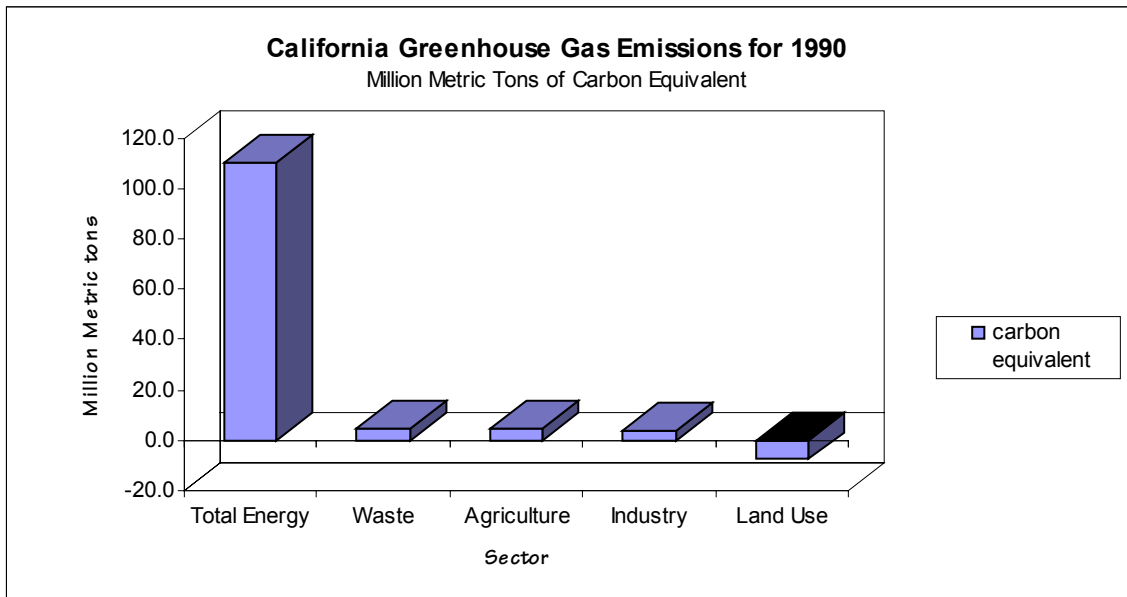


## CALIFORNIA GREENHOUSE GAS EMISSIONS AND SINKS INVENTORY: SUMMARY



The report “*California’s Greenhouse Gas Emissions Inventory 1990*” provides a detailed inventory of greenhouse gas emissions and sinks for California in 1990. Emissions were estimated using methods from EPA’s 1995 guidance document ***State Workbook: Methodologies for Estimating Greenhouse Gas Emissions***. In 1990, California emitted 115.9 million metric tons of carbon equivalent (MMTCE). California estimated emissions of 3.6 MMTCE from biomass fuels and from other sources. Emissions from these sources are not included in the reported total or the table below.<sup>1,2</sup>

The principal greenhouse gases were carbon dioxide, comprising 380.2 million metric tons (103.7 MMTCE), and methane, with 1.8 million metric tons (10.3 MMTCE). Other emissions included over 23 thousand metric tons of nitrous oxide (2.0 MMTCE).

<sup>1</sup> Note that the state of the art emission inventory method has advanced since California completed its inventory; therefore, we have made the following adjustments to California’s emission estimates. First, we excluded emission estimates for sources not covered by the most recent inventory guidance (<http://www.epa.gov/ttnchie1/eip/techrep.htm#green>). These emissions include carbon dioxide from combustion of biogas, livestock waste, ethanol, agricultural waste, and forest and mill waste; and carbon dioxide emissions from soils due to grassland conversion. Second, we used updated values for global warming potentials.

<sup>2</sup> California’s inventory included emissions of non-methane volatile organic compounds, carbon monoxide, and nitrogen oxides, which are greenhouse gases for which global warming potentials have not yet been developed.

## California Greenhouse Gas Emissions for 1990

BY SECTOR	CO2 (MMTCE)	Methane (MMTCE)	Nitrous Oxide (MMTCE)	HFCs, PFCs, and SF6 (MMTCE)	Total GHG Emissions (MMTCE)
Energy - Residential	8.3	*	*	*	8.3
Energy - Commercial	4.2	*	*	*	4.2
Energy - Industrial	24.4	*	*	*	24.4
Energy - Transport	58.4	*	*	*	58.4
Energy - Utility	12.2	*	*	*	12.2
Energy - Exported Electricity	*	*	*	*	*
Energy - Other	*	1.5	1.1	*	2.6
<b>Total Energy</b>	<b>107.5</b>	<b>1.5</b>	<b>1.1</b>	*	<b>110.1</b>
<b>Waste</b>	<b>0.1</b>	<b>4.9</b>	<b>0.0</b>	*	<b>5.0</b>
<b>Agriculture</b>	*	<b>3.9</b>	<b>0.7</b>	*	<b>4.6</b>
<b>Industry</b>	<b>3.6</b>	*	<b>0.1</b>	*	<b>3.7</b>
<b>Land Use</b>	<b>-7.5</b>	*	*	*	<b>-7.5</b>
<b>Total</b>	<b>103.7</b>	<b>10.3</b>	<b>2.0</b>	*	<b>115.9</b>

All emissions are reported in million metric tons of carbon equivalent (MMTCE).

An asterisk ( \* ) indicates that emissions of the gas from this sector were zero, insignificant, or not reported.

Emissions due to coal mining and extraction of natural gas and oil are included in the total energy figures, and emissions from biofuel combustion are excluded.

The major source of carbon dioxide emissions was fossil fuel combustion (97%), with minor emissions from limestone use (2%), cement production (1%), carbon dioxide manufacture (<1%), waste combustion (<1%), and lime manufacture (<1%). Carbon dioxide sinks (i.e., an increase in forest carbon storage) offset approximately 7% of total carbon dioxide emissions. Contributors to methane emissions included landfills (46%), domesticated animals (21%), manure management (15%), natural gas and oil systems (13%), rice cultivation (2%), fossil fuel combustion (2%), wastewater treatment (1%), agricultural burning (<1%), and coal mining (<1%). The major sources of nitrous oxide emissions were fossil fuel combustion (56%), agricultural soils (38%), and nitric acid production (5%), with minor emissions from waste combustion (<1%), and agricultural burning (<1%).

California emissions in 1990 were 3.9 MTCE per capita, compared to 1990 U.S. emissions of 6.4 MTCE per capita.