Emissions Inventory Data by Source Category

California's first Regional Haze Progress Report reported oxides of Nitrogen (NOx), oxides of sulfur (SOx), reactive organic gases (ROG), and PM2.5 emissions data through 2011. For this Progress Report, emissions data from all sectors were available through 2017. A summary and analyses of these emissions data by source sub-categories are provided below.

Oxides of Nitrogen (NOx) Emissions

Between 2011 and 2017, statewide NOx emissions decreased by 30 percent, from 1,869 to 1,317 tons per day (tpd) (Table S-1).

Mobile sources accounted for 80 percent of NOx emissions in 2017. Between 2011 and 2017, NOx emissions from mobile sources decreased by 32 percent, from 1,547 to 1,051 tpd. The largest decrease was in emissions from heavy heavy-duty diesel trucks, which decreased by 195 tpd. Emissions from aircraft and ocean-going vessels, sources primarily under federal jurisdiction, increased by seven and 14 tpd, respectively, due to sector growth.

Stationary sources accounted for 15 percent of NOx emissions in 2017. Between 2011 and 2017, stationary source NOx emissions decreased by 19 percent, from 243 to 198 tpd. The largest decrease was in fuel combustion from service and commercial operations, which decreased by 15 tpd. Emissions from mineral processes increased slightly due to sector growth.

Areawide sources accounted for five percent of NOx emissions in 2017. Between 2011 and 2017, emissions from areawide sources decreased by 14 percent, from 79 to 68 tpd. The largest decrease was in residential fuel combustion, which decreased by 12 tpd. Emissions from managed burning and disposal increased slightly due to sector growth.

Table S-1: Statewide Annual NOx Emissions (tpd*)

Source Category Sub-Category Description	**2011**	**2014**	**2017**	**Change in Emissions 2011 to 2017**
Fuel Combustion Electric Utilities	17	17	13	-4
Fuel Combustion Cogeneration	16	14	12	-4
Fuel Combustion Oil and Gas Production	10	9	8	-2
Fuel Combustion Petroleum Refining	19	20	19	0

Source Category Sub-Category Description	2011	2014	2017	Change in Emissions 2011 to 2017
Fuel Combustion Manufacturing and Industrial	49	48	44	-5
Fuel Combustion Food and Agricultural Processing	22	20	11	-11
Fuel Combustion Service and Commercial	50	40	35	-15
Fuel Combustion Other	8	8	7	-1
Waste Disposal Sewage Treatment	0	0	0	0
Waste Disposal Landfills	1	1	1	0
Waste Disposal Incinerators	3	3	2	-1
Waste Disposal Soil Remediation	0	0	0	0
Waste Disposal Other	0	0	0	0
Cleaning and Surface Coatings Laundering	0	0	0	0
Cleaning and Surface Coatings Degreasing	0	0	0	0
Cleaning and Surface Coatings Coatings and Related Process Solvents	0	0	0	0
Cleaning and Surface Coatings Printing	0	0	0	0
Cleaning and Surface Coatings Adhesives and Sealants	0	0	0	0
Cleaning and Surface Coatings Other	0	0	0	0
Petroleum Production and Marketing Oil and Gas Production	3	3	2	-1
Petroleum Production and Marketing Petroleum Refining	2	2	1	-1
Petroleum Production and Marketing Petroleum Marketing	0	0	0	0
Petroleum Production and Marketing Other	0	0	0	0

Source Category Sub-Category Description	2011	2014	2017	Change in Emissions 2011 to 2017
Industrial Processes Chemical	2	2	2	0
Industrial Processes Food and Agriculture	0	0	0	0
Industrial Processes Mineral Processes	33	35	36	3
Industrial Processes Metal Processes	1	1	0	-1
Industrial Processes Wood and Paper	1	1	1	0
Industrial Processes Glass and Related Products	5	3	3	-2
Industrial Processes Electronics	0	0	0	0
Industrial Processes Other	2	1	1	-1
Stationary Total	**243**	**228**	**198**	**-45**
Solvent Evaporation Consumer Products	0	0	0	0
Solvent Evaporation Architectural Coatings and Related Proc.	0	0	0	0
Solvent Evaporation Pesticides/Fertilizers	0	0	0	0
Solvent Evaporation Asphalt Paving/Roofing	0	0	0	0
Miscellaneous Processes Residential Fuel Combustion	68	55	56	-12
Miscellaneous Processes Farming Operations	0	0	0	0
Miscellaneous Processes Construction and Demolition	0	0	0	0
Miscellaneous Processes Paved Road Dust	0	0	0	0
Miscellaneous Processes Unpaved Road Dust	0	0	0	0
Miscellaneous Processes Fugitive Windblown Dust	0	0	0	0

Source Category Sub-Category Description	2011	2014	2017	Change in Emissions 2011 to 2017
Miscellaneous Processes Fires	0	0	0	0
Miscellaneous Processes Managed Burning and Disposal	10	9	12	2
Miscellaneous Processes Cooking	0	0	0	0
Miscellaneous Processes Other	0	0	0	0
Areawide Total	**79**	**65**	**68**	**-11**
On-Road Motor Vehicles Light Duty Passenger	141	100	68	-73
On-Road Motor Vehicles Light Duty Trucks	120	89	65	-55
On-Road Motor Vehicles Medium Duty Trucks	70	57	43	-27
On-Road Motor Vehicles Light Heavy-Duty Gas Trucks	15	12	11	-4
On-Road Motor Vehicles Medium Heavy-Duty Gas Trucks	5	4	3	-2
On-Road Motor Vehicles Heavy Heavy-Duty Gas Trucks	2	1	0	-2
On-Road Motor Vehicles Light Heavy-Duty Diesel Trucks	91	61	65	-26
On-Road Motor Vehicles Medium Heavy-Duty Diesel Trucks	114	102	79	-35
On-Road Motor Vehicles Heavy Heavy-Duty Diesel Trucks	428	306	233	-195
On-Road Motor Vehicles Motorcycles	7	7	7	0
On-Road Motor Vehicles Heavy-Duty Diesel Urban Buses	15	12	4	-11
On-Road Motor Vehicles Heavy-Duty Gas Urban Buses	0	0	0	0
On-Road Motor Vehicles School Buses - Gas	1	0	0	-1
On-Road Motor Vehicles School Buses - Diesel	8	8	8	0

Source Category Sub-Category Description	2011	2014	2017	Change in Emissions 2011 to 2017
On-Road Motor Vehicles Other Buses - Gas	1	1	1	0
On-Road Motor Vehicles Other Buses – Motor Coach - Diesel	4	3	2	-2
On-Road Motor Vehicles All Other Buses - Diesel	4	4	3	-1
On-Road Motor Vehicles Motor Homes	4	3	3	-1
Other Mobile Sources Aircraft	42	44	49	7
Other Mobile Sources Trains	95	87	76	-19
Other Mobile Sources Ships and Commercial Boats	0	0	0	0
Other Mobile Sources Ocean-Going Vessels	26	28	40	14
Other Mobile Sources Commercial Harbor Craft	20	18	13	-7
Other Mobile Sources Recreational Boats	23	21	20	-3
Other Mobile Sources Off-Road Recreational Vehicles	1	1	1	0
Other Mobile Sources Off-Road Equipment	209	190	177	-32
Other Mobile Sources Farm Equipment	101	89	80	-21
Other Mobile Sources Fuel Storage and Handling	0	0	0	0
Mobile Sources Total	**1,547**	**1,264**	**1,051**	**-496**
TOTAL NOx	**1,869**	**1,557**	**1,317**	**-552**

**Data source: CEPAM CA Regional Haze Baseline Emission Projection – Version 1.04 with External Adjustments Planning Inventory Tool; Emissions in tpd can be multiplied by 365 to determine emissions in tons per year; Sector and pollutant totals may not add up due to rounding conventions applied to sub-sector emissions.*

Oxides of Sulfur (SOx) Emissions

Between 2011 and 2017, SOx emissions in California decreased by 20 percent, from 73 to 59 tpd (Table S-2).

Stationary sources accounted for 73 percent of SOx emissions in 2017. Between 2011 and 2017, SOx emissions from stationary sources decreased by 17 percent, from 51 to 43 tpd. The largest decrease was in emissions from fuel combustion at electric utilities, which decreased by two tpd. Emissions from both fuel combustion in food and agricultural processing as well as landfill waste disposal increased slightly due to sector growth.

Mobile sources accounted for 20 percent of SOx emissions in 2017. Between 2011 and 2017, SOx emissions from mobile sources decreased by 28 percent, from 17 to 12 tpd. The largest decreases were in emissions from trains and ocean-going vessels, which each decreased by three tpd.

Areawide sources accounted for seven percent of SOx emissions in 2017. Between 2011 and 2017, SOx emissions from areawide sources decreased by 24 percent, from around five to four tpd as a result of emissions reductions from residential fuel combustion.

Table S-2: Statewide Annual SOx emissions (tpd *)

Source Category Sub-Category Description	**2011**	**2014**	**2017**	**Change in Emissions 2011 to 2017**
Fuel Combustion Electric Utilities	4	2	1	-3
Fuel Combustion Cogeneration	1	1	1	0
Fuel Combustion Oil and Gas Production	2	1	1	-1
Fuel Combustion Petroleum Refining	9	9	7	-2
Fuel Combustion Manufacturing and Industrial	9	7	9	0
Fuel Combustion Food and Agricultural Processing	0	1	1	1
Fuel Combustion Service and Commercial	3	3	2	-1
Fuel Combustion Other	0	0	0	0
Waste Disposal Sewage Treatment	0	0	0	0
Waste Disposal Landfills	0	1	1	1

Source Category Sub-Category Description	2011	2014	2017	Change in Emissions 2011 to 2017
Waste Disposal Incinerators	1	1	1	0
Waste Disposal Soil Remediation	0	0	0	0
Waste Disposal Other	0	0	0	0
Cleaning and Surface Coatings Laundering	0	0	0	0
Cleaning and Surface Coatings Degreasing	0	0	0	0
Cleaning and Surface Coatings Coatings and Related Process Solvents	0	0	0	0
Cleaning and Surface Coatings Printing	0	0	0	0
Cleaning and Surface Coatings Adhesives and Sealants	0	0	0	0
Cleaning and Surface Coatings Other	0	0	0	0
Petroleum Production and Marketing Oil and Gas Production	1	1	1	0
Petroleum Production and Marketing Petroleum Refining	4	3	3	-1
Petroleum Production and Marketing Petroleum Marketing	0	0	0	0
Petroleum Production and Marketing Other	0	0	0	0
Industrial Processes Chemical	3	2	2	-1
Industrial Processes Food and Agriculture	1	1	1	0
Industrial Processes Mineral Processes	12	12	12	0
Industrial Processes Metal Processes	0	0	0	0
Industrial Processes Wood and Paper	0	0	0	0
Industrial Processes Glass and Related Products	2	2	1	-1

Source Category Sub-Category Description	2011	2014	2017	Change in Emissions 2011 to 2017
Industrial Processes Electronics	0	0	0	0
Industrial Processes Other	1	0	0	-1
Stationary Total	**51**	**46**	**43**	-8
Solvent Evaporation Consumer Products	0	0	0	0
Solvent Evaporation Architectural Coatings and Related Proc.	0	0	0	0
Solvent Evaporation Pesticides/Fertilizers	0	0	0	0
Solvent Evaporation Asphalt Paving/Roofing	0	0	0	0
Miscellaneous Processes Residential Fuel Combustion	3	3	2	-1
Miscellaneous Processes Farming Operations	0	0	0	0
Miscellaneous Processes Construction and Demolition	0	0	0	0
Miscellaneous Processes Paved Road Dust	0	0	0	0
Miscellaneous Processes Unpaved Road Dust	0	0	0	0
Miscellaneous Processes Fugitive Windblown Dust	0	0	0	0
Miscellaneous Processes Fires	0	0	0	0
Miscellaneous Processes Managed Burning and Disposal	2	1	2	0
Miscellaneous Processes Cooking	0	0	0	0
Miscellaneous Processes Other	0	0	0	0
Areawide Total	**5**	**4**	**4**	**-1**
On-Road Motor Vehicles Light Duty Passenger	2	2	2	0

Source Category Sub-Category Description	2011	2014	2017	Change in Emissions 2011 to 2017
On-Road Motor Vehicles Light Duty Trucks	1	1	1	0
On-Road Motor Vehicles Medium Duty Trucks	1	1	1	0
On-Road Motor Vehicles Light Heavy-Duty Gas Trucks	0	0	0	0
On-Road Motor Vehicles Medium Heavy-Duty Gas Trucks	0	0	0	0
On-Road Motor Vehicles Heavy Heavy-Duty Gas Trucks	0	0	0	0
On-Road Motor Vehicles Light Heavy-Duty Diesel Trucks	0	0	0	0
On-Road Motor Vehicles Medium Heavy-Duty Diesel Trucks	0	0	0	0
On-Road Motor Vehicles Heavy Heavy-Duty Diesel Trucks	1	1	1	0
On-Road Motor Vehicles Motorcycles	0	0	0	0
On-Road Motor Vehicles Heavy-Duty Diesel Urban Buses	0	0	0	0
On-Road Motor Vehicles Heavy-Duty Gas Urban Buses	0	0	0	0
On-Road Motor Vehicles School Buses - Gas	0	0	0	0
On-Road Motor Vehicles School Buses - Diesel	0	0	0	0
On-Road Motor Vehicles Other Buses - Gas	0	0	0	0
On-Road Motor Vehicles Other Buses – Motor Coach - Diesel	0	0	0	0
On-Road Motor Vehicles All Other Buses - Diesel	0	0	0	0
On-Road Motor Vehicles Motor Homes	0	0	0	0
Other Mobile Sources Aircraft	5	5	5	0
Other Mobile Sources Trains	3	0	0	-3

Source Category Sub-Category Description	2011	2014	2017	Change in Emissions 2011 to 2017
Other Mobile Sources Ships and Commercial Boats	0	0	0	0
Other Mobile Sources Ocean-Going Vessels	5	3	2	-3
Other Mobile Sources Commercial Harbor Craft	0	0	0	0
Other Mobile Sources Recreational Boats	0	0	0	0
Other Mobile Sources Off-Road Recreational Vehicles	0	0	0	0
Other Mobile Sources Off-Road Equipment	0	0	0	0
Other Mobile Sources Farm Equipment	0	0	0	0
Other Mobile Sources Fuel Storage and Handling	0	0	0	0
Mobile Sources Total	**17**	**12**	**12**	**-5**
TOTAL SOx	**73**	**63**	**59**	**-14**

**Data source: CEPAM CA Regional Haze Baseline Emission Projection – Version 1.04 with External Adjustments Planning Inventory Tool; Emissions in tpd can be multiplied by 365 to determine emissions in tons per year; Sector and pollutant totals may not add up due to rounding conventions applied to sub-sector emissions.*

PM2.5 Emissions

Between 2011 and 2017, statewide PM2.5 emissions decreased by ten percent, from 408 to 368 tpd.

Areawide sources accounted for 68 percent of PM2.5 emissions in 2017. Between 2011 and 2017, PM2.5 emissions from areawide sources decreased by six percent, from 266 to 251 tpd. As shown in Table S-3, the largest decreases were in emissions from residential fuel combustion and managed burning and disposal. Emissions from paved roads, construction and demolition, and cooking increased slightly due to sector growth.

Mobile sources accounted for 16 percent of PM2.5 emissions in 2017. Between 2011 and 2017, PM2.5 emissions from mobile sources decreased by 22 percent, from 76 to 59 tpd. The largest decrease was in emissions from heavy heavy-duty diesel trucks, which decreased by 11 tpd. Emissions from light duty passenger vehicles increased slightly due to sector growth.

Stationary sources accounted for 16 percent of PM2.5 emissions in 2017. Between 2011 and 2017, PM2.5 emissions from stationary sources decreased by 12 percent, from 66 to 58 tpd. The largest decrease was in emissions from mineral processes, which decreased by five tpd. Emissions from waste disposal in landfills, petroleum refining, and other industrial processes increased slightly due to sector growth.

Table S-3: Statewide Annual PM2.5 Emissions (tpd*)

Source Category Sub-Category Description	**2011**	**2014**	**2017**	**Change in Emissions 2011 to 2017**
Fuel Combustion Electric Utilities	5	5	4	-1
Fuel Combustion Cogeneration	3	2	2	-1
Fuel Combustion Oil and Gas Production	2	3	2	0
Fuel Combustion Petroleum Refining	4	5	4	0
Fuel Combustion Manufacturing and Industrial	5	5	4	-1
Fuel Combustion Food and Agricultural Processing	1	1	1	0
Fuel Combustion Service and Commercial	5	4	4	-1
Fuel Combustion Other	1	1	1	0

Source Category Sub-Category Description	2011	2014	2017	Change in Emissions 2011 to 2017
Waste Disposal Sewage Treatment	0	0	0	0
Waste Disposal Landfills	0	1	1	1
Waste Disposal Incinerators	0	0	0	0
Waste Disposal Soil Remediation	0	0	0	0
Waste Disposal Other	0	0	0	0
Cleaning and Surface Coatings Laundering	0	0	0	0
Cleaning and Surface Coatings Degreasing	0	0	0	0
Cleaning and Surface Coatings Coatings and Related Process Solvents	2	2	2	0
Cleaning and Surface Coatings Printing	0	0	0	0
Cleaning and Surface Coatings Adhesives and Sealants	0	0	0	0
Cleaning and Surface Coatings Other	1	0	0	-1
Petroleum Production and Marketing Oil and Gas Production	0	0	0	0
Petroleum Production and Marketing Petroleum Refining	2	2	3	1
Petroleum Production and Marketing Petroleum Marketing	0	0	0	0
Petroleum Production and Marketing Other	0	0	0	0
Industrial Processes Chemical	2	1	2	0
Industrial Processes Food and Agriculture	3	3	3	0
Industrial Processes Mineral Processes	18	18	13	-5
Industrial Processes Metal Processes	1	1	1	0

Source Category Sub-Category Description	2011	2014	2017	Change in Emissions 2011 to 2017
Industrial Processes Wood and Paper	7	7	7	0
Industrial Processes Glass and Related Products	1	1	0	-1
Industrial Processes Electronics	0	0	0	0
Industrial Processes Other	3	3	4	1
Stationary Total	**66**	**65**	**58**	**-8**
Solvent Evaporation Consumer Products	0	0	0	0
Solvent Evaporation Architectural Coatings and Related Proc.	0	0	0	0
Solvent Evaporation Pesticides/Fertilizers	0	0	0	0
Solvent Evaporation Asphalt Paving/Roofing	0	0	0	0
Miscellaneous Processes Residential Fuel Combustion	58	66	48	-10
Miscellaneous Processes Farming Operations	22	22	21	-1
Miscellaneous Processes Construction and Demolition	15	16	18	3
Miscellaneous Processes Paved Road Dust	23	25	27	4
Miscellaneous Processes Unpaved Road Dust	28	26	25	-3
Miscellaneous Processes Fugitive Windblown Dust	50	50	49	-1
Miscellaneous Processes Fires	1	1	1	0
Miscellaneous Processes Managed Burning and Disposal	44	30	34	-10
Miscellaneous Processes Cooking	26	26	27	1
Miscellaneous Processes Other	0	0	0	0

Source Category Sub-Category Description	2011	2014	2017	Change in Emissions 2011 to 2017
Areawide Total	**266**	**262**	**251**	**-15**
On-Road Motor Vehicles Light Duty Passenger	10	10	11	1
On-Road Motor Vehicles Light Duty Trucks	5	5	5	0
On-Road Motor Vehicles Medium Duty Trucks	3	3	3	0
On-Road Motor Vehicles Light Heavy-Duty Gas Trucks	1	1	1	0
On-Road Motor Vehicles Medium Heavy-Duty Gas Trucks	0	0	0	0
On-Road Motor Vehicles Heavy Heavy-Duty Gas Trucks	0	0	0	0
On-Road Motor Vehicles Light Heavy-Duty Diesel Trucks	1	1	1	0
On-Road Motor Vehicles Medium Heavy-Duty Diesel Trucks	6	5	3	-3
On-Road Motor Vehicles Heavy Heavy-Duty Diesel Trucks	17	9	6	-11
On-Road Motor Vehicles Motorcycles	0	0	0	0
On-Road Motor Vehicles Heavy-Duty Diesel Urban Buses	0	0	0	0
On-Road Motor Vehicles Heavy-Duty Gas Urban Buses	0	0	0	0
On-Road Motor Vehicles School Buses - Gas	0	0	0	0
On-Road Motor Vehicles School Buses - Diesel	0	0	0	0
On-Road Motor Vehicles Other Buses - Gas	0	0	0	0
On-Road Motor Vehicles Other Buses – Motor Coach - Diesel	0	0	0	0
On-Road Motor Vehicles All Other Buses - Diesel	0	0	0	0
On-Road Motor Vehicles Motor Homes	0	0	0	0

Source Category Sub-Category Description	2011	2014	2017	Change in Emissions 2011 to 2017
Other Mobile Sources Aircraft	9	8	8	-1
Other Mobile Sources Trains	2	2	2	0
Other Mobile Sources Ships and Commercial Boats	0	0	0	0
Other Mobile Sources Ocean-Going Vessels	1	1	1	0
Other Mobile Sources Commercial Harbor Craft	1	1	0	-1
Other Mobile Sources Recreational Boats	6	5	5	-1
Other Mobile Sources Off-Road Recreational Vehicles	0	0	0	0
Other Mobile Sources Off-Road Equipment	9	8	7	-2
Other Mobile Sources Farm Equipment	6	5	5	-1
Other Mobile Sources Fuel Storage and Handling	0	0	0	0
Mobile Sources Total	**76**	**64**	**59**	**-17**
TOTAL PM2.5	**408**	**391**	**368**	**-40**

**Data source: CEPAM CA Regional Haze Baseline Emission Projection – Version 1.04 with External Adjustments Planning Inventory Tool; Emissions in tpd can be multiplied by 365 to determine emissions in tons per year; Sector and pollutant totals may not add up due to rounding conventions applied to sub-sector emissions.*

Reactive Organic Gases (ROG) Emissions

Between 2011 and 2017, ROG emissions in California decreased from 1,786 to 1,519 tpd.

Areawide sources accounted for 38 percent of ROG emissions in 2017. Between 2011 and 2017, ROG emissions from areawide sources decreased by seven percent, from 630 to 584 tpd. As shown in Table S-4, the largest decrease was in emissions from farming operations, which decreased by 32 tpd. Solvent evaporation from consumer products emissions and asphalt paving/roofing increased due to sector growth.

Mobile sources accounted for 37 percent of ROG emissions in 2017. Between 2011 and 2017, ROG emissions from mobile sources decreased by 28 percent, from 791 to 569 tpd. The largest decreases were in emissions from light duty passenger vehicles, light duty trucks, recreational boats, and off-road equipment sub-sectors, which decreased by 65 tpd, 34 tpd, 34 tpd, and 31 tpd, respectively.

Stationary sources accounted for 24 percent of ROG emissions in 2017. Between 2011 and 2017, ROG emissions from stationary sources remained largely unchanged. Emissions from multiple stationary source sub-sectors including cogeneration fuel combustion, fuel combustion in oil and gas production, fuel combustion in food and agricultural processing, service and commercial fuel combustion, waste disposal incinerators, printing, oil and gas production, petroleum marketing, and industrial wood and paper processes have decreased. These decreases have been offset by increased emissions from waste disposal in landfills, other waste disposal sources, degreasing, coatings and related process solvents, adhesives and sealants, other cleaning and surface coatings sources, petroleum refining, chemical industrial processes, industrial processes in food and agriculture, mineral processes, and other industrial process sources that have resulted from growth in these sectors.

Table S-4: Statewide Annual ROG emissions (tpd*)

Source Category Sub-Category Description	**2011**	**2014**	**2017**	**Change in Emissions 2011 to 2017**
Fuel Combustion Electric Utilities	2	2	2	0
Fuel Combustion Cogeneration	3	2	2	-1
Fuel Combustion Oil and Gas Production	2	2	2	0
Fuel Combustion Petroleum Refining	3	3	3	0
Fuel Combustion Manufacturing and Industrial	3	3	3	0

Source Category Sub-Category Description	2011	2014	2017	Change in Emissions 2011 to 2017
Fuel Combustion Food and Agricultural Processing	3	2	2	-1
Fuel Combustion Service and Commercial	6	5	5	-1
Fuel Combustion Other	1	2	1	0
Waste Disposal Sewage Treatment	1	1	1	0
Waste Disposal Landfills	15	16	16	1
Waste Disposal Incinerators	2	2	1	-1
Waste Disposal Soil Remediation	0	0	0	0
Waste Disposal Other	32	36	34	2
Cleaning and Surface Coatings Laundering	1	1	1	0
Cleaning and Surface Coatings Degreasing	36	35	38	2
Cleaning and Surface Coatings Coatings and Related Process Solvents	54	52	55	1
Cleaning and Surface Coatings Printing	18	16	17	-1
Cleaning and Surface Coatings Adhesives and Sealants	20	21	22	2
Cleaning and Surface Coatings Other	9	9	10	1
Petroleum Production and Marketing Oil and Gas Production	34	33	27	-7
Petroleum Production and Marketing Petroleum Refining	11	13	13	2
Petroleum Production and Marketing Petroleum Marketing	59	55	55	-4
Petroleum Production and Marketing Other	0	0	0	0
Industrial Processes Chemical	14	14	15	1

Source Category Sub-Category Description	2011	2014	2017	Change in Emissions 2011 to 2017
Industrial Processes Food and Agriculture	15	18	19	4
Industrial Processes Mineral Processes	3	3	5	2
Industrial Processes Metal Processes	0	0	0	0
Industrial Processes Wood and Paper	5	2	2	-3
Industrial Processes Glass and Related Products	0	0	0	0
Industrial Processes Electronics	0	0	0	0
Industrial Processes Other	11	12	15	4
Stationary Total	**365**	**361**	**366**	**1**
Solvent Evaporation Consumer Products	244	241	252	8
Solvent Evaporation Architectural Coatings and Related Proc.	48	43	43	-5
Solvent Evaporation Pesticides/Fertilizers	42	44	42	0
Solvent Evaporation Asphalt Paving/Roofing	26	28	30	4
Miscellaneous Processes Residential Fuel Combustion	68	80	56	-12
Miscellaneous Processes Farming Operations	156	125	124	-32
Miscellaneous Processes Construction and Demolition	0	0	0	0
Miscellaneous Processes Paved Road Dust	0	0	0	0
Miscellaneous Processes Unpaved Road Dust	0	0	0	0
Miscellaneous Processes Fugitive Windblown Dust	0	0	0	0
Miscellaneous Processes Fires	1	1	1	0

Source Category Sub-Category Description	2011	2014	2017	Change in Emissions 2011 to 2017
Miscellaneous Processes Managed Burning and Disposal	39	26	29	-10
Miscellaneous Processes Cooking	5	5	5	0
Miscellaneous Processes Other	2	2	2	0
Areawide Total	**630**	**595**	**584**	**-46**
On-Road Motor Vehicles Light Duty Passenger	146	112	81	-65
On-Road Motor Vehicles Light Duty Trucks	100	29	66	-34
On-Road Motor Vehicles Medium Duty Trucks	48	45	39	-9
On-Road Motor Vehicles Light Heavy-Duty Gas Trucks	15	15	14	-1
On-Road Motor Vehicles Medium Heavy-Duty Gas Trucks	4	3	2	-2
On-Road Motor Vehicles Heavy Heavy-Duty Gas Trucks	1	0	0	-1
On-Road Motor Vehicles Light Heavy-Duty Diesel Trucks	3	2	3	0
On-Road Motor Vehicles Medium Heavy-Duty Diesel Trucks	10	8	5	-5
On-Road Motor Vehicles Heavy Heavy-Duty Diesel Trucks	31	18	11	-20
On-Road Motor Vehicles Motorcycles	26	26	25	-1
On-Road Motor Vehicles Heavy-Duty Diesel Urban Buses	1	1	0	-1
On-Road Motor Vehicles Heavy-Duty Gas Urban Buses	0	0	0	0
On-Road Motor Vehicles School Buses - Gas	0	0	0	0
On-Road Motor Vehicles School Buses - Diesel	1	0	0	-1
On-Road Motor Vehicles Other Buses - Gas	0	0	0	0

Source Category Sub-Category Description	2011	2014	2017	Change in Emissions 2011 to 2017
On-Road Motor Vehicles Other Buses – Motor Coach - Diesel	0	0	0	0
On-Road Motor Vehicles All Other Buses - Diesel	0	0	0	0
On-Road Motor Vehicles Motor Homes	1	1	0	-1
Other Mobile Sources Aircraft	26	26	27	1
Other Mobile Sources Trains	6	4	3	-3
Other Mobile Sources Ships and Commercial Boats	0	0	0	0
Other Mobile Sources Ocean-Going Vessels	9	8	10	1
Other Mobile Sources Commercial Harbor Craft	1	1	1	0
Other Mobile Sources Recreational Boats	138	120	104	-34
Other Mobile Sources Off-Road Recreational Vehicles	21	17	15	-6
Other Mobile Sources Off-Road Equipment	164	142	133	-31
Other Mobile Sources Farm Equipment	20	17	15	-5
Other Mobile Sources Fuel Storage and Handling	19	16	14	-5
Mobile Sources Total	**791**	**665**	**569**	**-222**
TOTAL ROG	**1786**	**1621**	**1519**	**-267**

**Data source: CEPAM CA Regional Haze Baseline Emission Projection – Version 1.04 with External Adjustments Planning Inventory Tool; Emissions in tpd can be multiplied by 365 to determine emissions in tons per year; Sector and pollutant totals may not add up due to rounding conventions applied to sub-sector emissions.*

Annual Emissions from Facilities Reporting to the Clean Air Markets Program

NOx and SO2 data from stationary sources reporting the Clean Air Markets Program (were available through 2019. A limited portion of California's stationary sources are subject to the Clean Air Markets Program data reporting requirements. Between 2012 and 2019, 120 facilities in California reported emissions data to this program. The cumulative NOx and SO2 emissions data reported for California facilities for 2012 through 2019 are shown in Table S-5. In this seven year period, NOx decreased by 2,407 tons and SO2 decreased by 75 tons. These reductions amount to 50 percent and 32 percent decreases for NOx and SO2 emissions, respectively.

Table S-5: Annual Emissions from California Facilities that Report to the CAMP (tons per year)

	2012	2013	2014	2015	2016	2017	2018	2019
NOx (short tons)	4,812	3,810	3,122	3,423	2,923	2,516	2,654	2,405
SO_2 (short tons)	231	230	231	232	190	162	164	156

Data Source: *https://campd.epa.gov/data*

As shown in Figure S-1, NOx and SO_2 emissions from California facilities reporting to the CAMP for the seven year period between 2012 and 2019 show a strong decreasing trend.

Figure S-1: Trends in Annual Emissions from Facilities in California that Report to the CAMP