

Bay Area Air District Greenhouse Gas Emissions Inventory Methodology

Introduction

This document serves as the Bay Area Air District's methodology for estimating greenhouse gas (GHG) emissions over the nine-county San Francisco Bay Area. It presents emissions estimation methodologies for most major and minor GHG sources in the Bay Area including permitted stationary sources (often called 'point' sources), non-permitted stationary sources (often referred to as 'area' sources) and mobile sources (both on-road and off-road). The methodologies documented here can be accessed via the Table of Contents on the left side of the page. Methodologies are organized into individual chapters under the main classification sectors - Transportation, Industrial, Electricity Generation, Commercial + Residential, Waste Management and Agriculture. Within a sector-type, different chapters represent methodologies for different process- and source-types. Certain processes and sources cut across economic sectors and their methodologies are covered under 'Multi-sector Sources' in the end. Each chapter in the Table of Contents details the specific methodology applied to individual source categories, following CARB's guidelines for emission estimation documentation:

- **Scope** – Defines the emission inventory codes (EICs) applicable to the source category covered in the chapter.
- **Introduction** – Provides an overview of the emission source category and its significance within the inventory.
- **Methodology** – Provides a written description of the emissions estimation calculation.
- **Activity Data** – Describes the datasets and sources used to determine activity data or throughputs.
- **County Distribution/Fractions** – Describes how activity data or throughputs are distributed to each county, including any methods used to estimate the fraction of Solano and Sonoma County activity occurring within the Bay Area Air District jurisdiction.
- **Emission Factors** – Lists emission factors for each pollutant applied in calculations, including their sources and justifications.

- **Control Factors/Emission Controls** – Lists applicable Bay Area Air District rules and regulations for the source category covered in the chapter, along with estimated emissions reductions by pollutant.
- **Sample Calculations** – Provides a sample calculation to demonstrate the methodology's application.
- **Assessment of Methodology** – Summarizes the overall approach for the current and all previous base year emissions inventories.
- **Emissions** – Includes a table showing base year emissions by EIC and county for each applicable pollutant.
- **Trends** – Includes a timeseries figure showing estimated historical and projected emissions by EIC.
- **Temporal Activity** – Includes a table on how emissions vary on an hourly, daily, weekly, and monthly basis.
- **Uncertainties** – Identifies key uncertainties/assumptions and their potential impact on emissions estimates.
- **References** – Lists the data sources, models, and literature used in the methodology.

The full emissions methodology can be accessed through a open-access public link to a Gitbook file:

<https://baaqmd.github.io/GHG-BY2022-methodology/>