

EMISSION INVENTORY

CATEGORY #307, #968

FUEL COMBUSTION - STATIONARY SOURCES - NATURAL GAS OTHER EXTERNAL COMBUSTION (307) GLASS MELTING FURNACES (968)

1999 EMISSIONS

Introduction

Emissions for category #307 were obtained from both point and area sources. This category include natural gas combusting sources such as commercial/institutional water and steam boilers, furnaces, space heaters, and ovens.

Emissions for category #968 were obtained from point sources only as contained in the District's data bank. Only sources covered by this category are natural gas fired glass melting furnaces at the glass manufacturing plants.

Methodologies

Point source:

Point source emissions for categories #307 and #968 were obtained from the District's data bank. The District updates the data each year on a source-by-source basis using as input:

1. Process material throughputs as reported by the plants.
2. Emissions factors (these may be source specific as reported by the plants or general factors, i.e. from the EPA).
3. Emissions control factors (device-specific or general - these may be supplied by the plants also).

The county, month, and day factors are obtained from the data bank's information.

Area source:

The area source emissions for category #307 were obtained from estimates of the natural gas usage in the District for area sources. The area source natural gas usage estimates were developed by obtaining the total point source usage, and then subtracting it from the corresponding combined values for commercial, institutional and industrial natural gas total usage (point + area) in the District, provided by PG&E. In essence, the computation to develop area source natural gas usage was as follows:

$$\begin{array}{ccccc} \text{PG\&E's} & & \text{District Data Bank's} & & \text{Area source} \\ \text{natural gas} & - & \text{point source} & = & \text{natural gas} \\ \text{usage values} & & \text{usage values} & & \text{usage values} \end{array}$$

EPA's AP-42, section 1.4 contain natural gas external combustion emission information.

TRENDS

History

Emission trends for point and area sources in this category have been in opposite direction for past few years. Point sources have been on the decrease and area sources on the increase.

Glass Melting Furnaces, category 968 was added to the emissions inventory system for base year 1990 after adoption of Regulation 9, Rule 12. Prior to base year 1990, emissions from Glass Melting Furnaces were accounted for in category 307.

Prior to base year 1987, category 307 was grouped as four categories: #86, 97, 99 and 111. This change to a single category for all area sources was made due to unavailability of separate natural gas usage data for each category.

Growth

Growth projections for category 307 are based on California Energy Commission's natural gas demand forecasts. California natural gas consumption is expected to increase by approximately one and a half percent per year.

For category 968, it was assumed that annual emissions would tend to follow and be influenced by manufacturing industry employment.

The data used in developing growth profiles was obtained from the Association of Bay Area Government's (ABAG) "Projections" reports.

Control

Regulation 9 controls emissions of NOx and CO from combustion.