The Emission Inventory and Air Quality Home Page

Frank Divita, Manish Salhotra, and Patricia Horch
E.H. Pechan & Associates, Inc.
5528 Hempstead Way
Springfield, VA 22151

and

Barry Gilbert
Ozone Policy and Strategies Group
U.S. Environmental Protection Agency
Research Triangle Park, NC 27711

ABSTRACT

A web site has been developed that provides detailed emission inventory and air quality data to support U.S. Environmental Protection Agency's efforts related to the National Ambient Air Quality Standard for ozone. This emission inventory and air quality home page was developed by E.H. Pechan & Associates, Inc., in conjunction with EPA. The web page can be accessed at http://www.emissionsonline.org.

The web site provides detailed emission summaries based on data contained in the 1996 National Emission Trends (NET) Inventory Version 4.00 (May 2001). New work has been initiated to post data from the latest version of the 1999 National Emissions Inventory (NEI). The site also contains hourly Emission Tracking System/Continuous Emissions Monitoring, air quality, and census related data, as well as several hundred color maps.

The site is organized into four major areas: Emissions Inventory Data; Air Quality Monitoring, Modeling and Related Data; State and Area Maps; and Other Data of Interest.

This presentation will introduce the web site and describe the updates that have been made over the last 12 months. An overview of each of these sections, as well as detailed examples of the summaries, reports, and maps that are available on the site will be provided.

INTRODUCTION TO SITE

Emissions Inventory Data

Data presented in this section include State, C/MSA, county, plant, and source category emission summaries. A major portion of this section is also dedicated to the Clean Air Markets Division's hourly ETS/CEM data.

1996 National Emission Trends (NET 96)

EPA's Emission Factor and Inventory Group prepared the NET 96 inventory with input from state and local environmental agencies. The database contains annual and ozone season daily emission estimates for criteria pollutants (VOC, NO_x, CO, SO_2, PM_{10}, $PM_{2.5}$, and NH_3) from three source sectors: stationary point sources that include electric generating units (EGUs), area and off-road sources, and on-road mobile sources. The site currently uses Version 4.0 of the NET 96 inventory.

Summaries are presented within two subset categories: State and C/MSA. Each emissions summary provided in this section is available for both subset categories (hereafter referred to as "State/MSA"). County-level emissions by State/MSA are available in tons per year for VOC, NO_x, CO, SO_2, and PM_{10} and in tons per day of ozone season for VOC and NO_x. Emissions by county as a percentage of an entire State/MSA are also available. County-level emission summaries also include data for vehicle miles traveled (VMT), population, and number of registered vehicles. These data can be downloaded in database format. Bar graphs comparing State/MSA annual and ozone season VOC and NO_x emissions by county are also at hand.

Plant-level emissions are detailed by county, including map IDs that correspond to the sites located on various maps. Only sources with VOC or NO_x emissions exceeding 100 tons/year are shown. Each of the 53,000 plants identified in the NET 96 inventory is represented with a detailed description page that provides emissions, SCCs, stack parameters, seasonal throughput, capacities, heat input, and controls for each stack unit. Complimenting these pages are bar graphs of the top 25 emitters of VOC, NO_x, SO_2, CO and PM_{10} for the specific State/MSA.

Clean Air Markets Division's Emissions Tracking System/Continuous Emissions Monitoring (ETS/CEM)Data

Coal-fired units are required to monitor and report NO_x emission rates, SO_2 and CO_2 emissions, and heat input data hourly to EPA's ETS/CEM database. Oil- and gas-fired units have the option to use CEMs or to measure fuel flow hourly and estimate SO_2, CO_2, and heat input based on fuel sampling; for NO_x, only oil- and gas-fired peaking units are allowed to use hourly estimation procedures (based on heat input) instead. Because the reporting requirements are new and complicated, it takes time for the reporting to be completely accurate; each year, the data quality improves over the previous year.

ETS/CEM data is available for 1998, 1997, 1996 and 1995. The data includes state, plant and boiler level NO_x emissions, heat input and NO_x emission rates. For these reports, the hourly NO_x emission rate is that which was reported to ETS at the monitor level. Daily, monthly, ozone season, and annual NOx emission rates are calculated by dividing the NO_x emissions (in tons) for the period by the heat input with the appropriate unit conversions.

Air Quality, Monitoring and Related Data

This area of the site contains data related to ambient ozone concentrations. Data presented include 8-hour ozone design values for counties and monitoring sites. Also presented are wind rose data and information on spatial clustering of ambient ozone in the Eastern United States. The site also contains modeling information in the Eastern United States (this section is under development). A link to EPA's list of nonattainment areas for criteria pollutants is available. Other data of interest in this section include census data, projected population data, C/MSA information, and maps of vehicle miles traveled by county.

State and Area Maps

Five types of maps are available for viewing and downloading. These characterize the NET 96 inventory in a visual format that pinpoints the locations of important pollutant sources, ozone monitors, and areas of interest. These maps include: MSA Maps; Point Source Locations; Ozone Monitoring Site Locations; Complete State Maps; and Area Maps.

Other Data of Interest

This area of the site has additional data that may be useful. Vehicle miles traveled (VMT) in 1996 are plotted on a U.S. map, and VMT growth estimates are available by state and county. Various census data can be found or linked to, including populations, counties in MSAs and distance to counties in MSAs. Links to state population projections by county are also accessible.

UPDATES TO SITE

In recent years the Environmental Protection Agency's annual emission inventory for criteria pollutants was called The National Emission Trends (NET) Inventory. This annual emission inventory has recently been updated to also include emission estimates of toxic pollutants, and will now be known as the National Emissions Inventory (NEI). The inventory contains emission estimates of stationary point, area, and mobile sources for all 50 States. A new initiative has begun to post data from the latest version of the 1999 NEI, which is currently in a Version 2.0 draft form. Data is also currently being compiled for 1999 to update the ETS/CEM data. Also, work has begun to include Native American Reservation data on the site.