



6560-50-P

**ENVIRONMENTAL PROTECTION AGENCY**

**[EPA-HQ-OAR-2013-0743; FRL-9903-46-OAR]**

**Notice of Availability of the Environmental Protection Agency's 2011 Emissions Modeling Platform**

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Notice of data availability (NODA).

**SUMMARY:** The Environmental Protection Agency (EPA) is providing notice that the 2011 Emissions Modeling Platform data are available for public review and comment. The 2011 Emissions Modeling Platform consists of emissions inventory data, supporting data, and methods that are used to process the 2011 National Emissions Inventory (NEI) and related data into a form that can be used for air quality modeling. The platform, or portions of the data that make up the platform, may be used by the Office of Air and Radiation in several contexts, including the development of rules related to the transport of air pollution and the National Ambient Air Quality Standards. The platform may also be used for other studies such as the National Air Toxics Assessment. The EPA is requesting comment on the 2011 Emissions Modeling Platform, including the emissions inventories and on the supporting data and methods. A docket has been established to track the comments.

**DATES:** Comments must be received on or before March 31, 2014.

Please refer to **SUPPLEMENTARY INFORMATION** for additional information on submitting comments and on the provided data.

**ADDRESSES:** Submit your comments, identified by Docket ID No. EPA-HQ-OAR-2013-0743, by one of the following methods:

- [www.regulations.gov](http://www.regulations.gov). Follow the on-line instructions for submitting comments.
- Fax: (202)566-9744. Attention Docket ID No. EPA-HQ-OAR-2013-0743.
- Mail: EPA Docket Center, WJC West (Air Docket), Attention Docket ID No. EPA-HQ-OAR-2013-0743, U.S. Environmental Protection Agency, Mailcode: 2822T, 1200 Pennsylvania Ave., NW, Washington, DC 20460. Please include a total of 2 copies.
- Hand Delivery: U.S. Environmental Protection Agency, WJC West (Air Docket), 1301 Constitution Avenue, NW, Room 3334, Washington, DC 20004, Attention Docket ID No. EPA-HQ- OAR-2013-0743. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

Instructions: Direct your comments to Docket ID No. EPA-HQ-OAR-2013-0743. The EPA's policy is that all comments received will be included in the public docket without change and may be made available online at [www.regulations.gov](http://www.regulations.gov), including any

personal information provided, unless the comment includes information claimed to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through [www.regulations.gov](http://www.regulations.gov) or email. The [www.regulations.gov](http://www.regulations.gov) website is an "anonymous access" system, which means the EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an email comment directly to the EPA without going through [www.regulations.gov](http://www.regulations.gov), your email address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, the EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD-ROM you submit. If the EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, the EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses. For additional information about the EPA's public docket, visit the EPA Docket Center homepage at <http://www.epa.gov/epahome/dockets.htm>.

Docket: All documents in the docket are listed in the

[www.regulations.gov](http://www.regulations.gov) index. Although listed in the index, some information is not publicly available, e.g., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy. Publicly available docket materials are available either electronically in [www.regulations.gov](http://www.regulations.gov) or in hard copy at the Air and Radiation Docket and Information Center, EPA/DC, WJC West Building Room 3334, 1301 Constitution Ave., NW, Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the Air Docket is (202) 566-1742.

**FOR FURTHER INFORMATION CONTACT:** For questions on the 2011 platform and on how to submit comments, contact Alison Eyth, Air Quality Assessment Division, Environmental Protection Agency, C339-02, 109 T.W. Alexander Drive, Research Triangle Park, NC 27709; telephone number: (919)541-2478; fax number: (919)541-0684; email address: [eyth.alison@epa.gov](mailto:eyth.alison@epa.gov).

**SUPPLEMENTARY INFORMATION:**

The EPA is requesting comment on the 2011 platform emission inventories; supporting ancillary files used to allocate emissions temporally, spatially, and by species; and on the emissions modeling methods used to process the inventories into

data suitable for input to air quality models. Summaries of the emission inventories and data are provided to aid in the review of the data, but comments are sought on the actual data.

**I. Additional Information on Submitting Comments**

A. What should I consider as I prepare my comments for EPA?

1. Submitting CBI. Do not submit this information to the EPA through EDOCKET, [www.regulations.gov](http://www.regulations.gov), or email. Clearly mark the part or all of the information that you claim to be CBI. For CBI information in a disk or CD-ROM that you mail to the EPA docket office specified in the Instructions, mark the outside of the disk or CD-ROM as CBI and then identify electronically within the disk or CD-ROM the specific information that is claimed as CBI. In addition to one complete version of the comment that includes information claimed as CBI, a copy of the comment that does not contain the information claimed as CBI must be submitted for inclusion in the public docket.

Information so marked will not be disclosed except in accordance with procedures set forth in 40 CFR part 2.

2. Tips for preparing your comments. When submitting comments, remember to:

i. Identify the notification by docket number and other identifying information (subject heading, Federal Register date and page number).

ii. Explain your comments, why you agree or disagree;

suggest alternatives and substitute data that reflects your requested changes.

iii. Describe any assumptions and provide any technical information and/or data that you used.

iv. Provide specific examples to illustrate your concerns, and suggest alternatives.

v. Explain your views as clearly as possible, avoiding the use of profanity or personal threats.

vi. Make sure to submit your comments by the comment period deadline identified.

B. Instructions for Agencies that Submit Data to the NEI

1. Updates to the 2011 NEI. State, local, and tribal agencies that submit data to the NEI via the Emissions Inventory System (EIS) are encouraged to submit any updates to the 2011 emission inventory data through EIS as described in <http://www.epa.gov/ttn/chief/net/2011inventory.html#v2instructions>. Updates to emission inventories, and to model inputs used to develop mobile source emission inventories in the NEI, should be submitted through EIS even in cases in which the 2011 modeling platform inventory data does not exactly match the NEI data. Specific examples of non-matching data are given in Section II. The EPA requests that agencies submitting updates via EIS also submit to the docket a comment that describes the nature of, and rationale for, the changes that were made in EIS to aid in the

documentation of changes to the inventories. These agencies do not need to submit to the docket the actual updated emission inventory data or model inputs already provided to EIS.

2. Updates to Other Data. EIS can accept updates to some of the categories of data for which EPA is requesting comments, but not for all of the data that exists in the modeling platform. The types of data that can be updated through EIS are noted below. Updates to all other modeling platform data and comments on the methods used must be provided through the docket. Additional details follow in Section I.C.

C. Instructions for Comments not Submitted through EIS

The EPA can most effectively incorporate comments that provide specific alternative values to those in the EPA data sets, and for which accompanying documentation supports the alternative values. Commenters should provide the alternative data at a level of detail appropriate to the data set into which it will be incorporated, thereby including all key fields needed to substitute the old data with the new. For example, commenters should not provide a new set of county total emissions as an alternative to more detailed point source emissions data.

Any alternative emission inventory or other data provided should be compatible with the formats used by the Sparse Matrix Operator Kernel Emissions (SMOKE) modeling system version 3.5, which is used by the EPA to process emission inventories into a

format that can be used for air quality modeling. Formats are defined in the SMOKE Version 3.5 User's Manual available from <http://www.smoke-model.org>. Only the rows of data that have changed from those provided by the EPA should be included in the alternative data sets.

## **II. Information Available for Public Comment**

The 2011 Emissions Modeling Platform consists of emission inventories primarily based on the 2011 NEI version 1, additional ancillary data files that are used to convert the NEI emissions into a form that can be used for air quality modeling, along with the methods used to prepare the air quality model inputs. The NEI represents emissions of criteria and hazardous pollutants into the atmosphere from all source categories within the United States. 2011 is the latest year for which a complete NEI for all emission processes is available. These complete, national emission inventories are prepared every three years and are primarily based on data and inputs provided by state, local, and tribal agencies for sources within their jurisdictions. The NEI includes emissions from sources at specific locations called point sources, emissions from fire events, and county-level emissions of onroad mobile sources, nonroad mobile sources, and other nonpoint sources.

The 2011 emissions modeling platform is named for the year of the data that it represents. The emission inventories in the

modeling platform are primarily based on the 2011 NEI version 1, although there are some key differences between the platform inventories and the NEI. First, in the modeling platform, the NEI inventories are split into additional categories called modeling sectors. For example, the point sources are split into peaking electric generating units (EGUs), other EGUs, oil and gas sources, and other point sources. The nonpoint sources are split into agricultural ammonia sources, residential wood sources, oil and gas sources, and other nonpoint sources. Other differences between the platform inventories and the NEI are in the emission values for commercial marine vessel emissions in specific areas, in the mobile source emissions in California and Texas, and the inclusion of additional ethanol plants in the modeling platform. Another difference is in the onroad mobile source emissions inventory values due to the use of different versions of the Motor Vehicle Emissions Simulator (MOVES) in the two data sets.

The 2011 emissions modeling platform also includes emissions inventories for Canada and Mexico, along with ancillary data files used to allocate annual emissions to the hourly, gridded emissions of chemical species used by an air quality model (AQM). The types of ancillary data files include temporal profiles that allocate annual and monthly emissions down to days and hours, spatial surrogates that allocate county-

level emissions onto the grid cells used by an AQM, and speciation profiles that allocate the pollutants in the NEI to the chemical species used by an AQM. In addition, there are temporal, spatial, and speciation cross-reference files that map the emission sources in the emission inventories to the appropriate profiles based on their location, emissions source classification code (SCC), and in some cases the specific facility or unit.

The 2011 emissions modeling platform, or portions of the data that make up the platform, may be used by the Office of Air and Radiation in several contexts including the development of rules related to the transport of air pollution and the National Ambient Air Quality Standards. Air quality modeling results that are based on the outputs of the emissions modeling platform are typically used in support of Regulatory Impact Analyses (RIAs) and sometimes support other aspects of rulemaking. The platform may also be used for other studies such as the National Air Toxics Assessment.

The EPA has placed key information related to the 2011 emissions modeling platform into the electronic docket available at [www.regulations.gov](http://www.regulations.gov). However, many of the detailed data files are too large to be directly uploaded into the electronic docket and/or are not in formats accepted by that docket. Therefore, the information placed in the electronic docket, associated

detailed data, and summaries to help with interpretation of the data are available for public review on the CHIEF Emissions Modeling Clearinghouse on EPA's website at <http://www.epa.gov/ttn/chief/emch/index.html#2011>. Supplementary custom and prepared summaries and extractions of the 2011 NEI, and documentation thereof, are also available on EPA's website at <http://www.epa.gov/ttn/chief/net/2011inventory.html>.

The emissions inventories, along with many of the ancillary files, are provided in the form of flat files that can be input to SMOKE. Flat files are comma-separated value style text files with columns and rows that can be loaded into spreadsheet or database software. The columns of interest in the emission inventory files are specified in each subsection below. The EPA requests comment on the following components of the 2011 emissions modeling platform data:

- Emission values. The emissions inventories used for the modeling platform are largely consistent with the 2011 NEI version 1 but are split into smaller sectors for emissions modeling. The EPA requests comment on both the criteria air pollutant (CAP) and hazardous air pollutant (HAP) emissions in the modeling inventories. The annual emissions values are located in the ANN\_VALUE column of the emission inventory files in Flat File 2010 (FF10) format. Some emission inventories (e.g., nonroad) may also have values filled in to the monthly

value columns (e.g., JAN\_VALUE, FEB\_VALUE, ..., DEC\_VALUE). The EPA requests comment on both the annual and monthly emissions values, where applicable. Summaries of emissions by state and county are provided to aid in the review of emissions values. Because the onroad emissions data differs from that in the NEI, and because of the data volume, state-specific extractions of the onroad emissions inventory data are provided. For EIS data submitters, updates to emission values can be provided via EIS.

- Model inputs and activity data used to develop mobile source emission inventories. The emission inventories in the NEI for onroad and nonroad mobile sources are developed by running MOVES and the National Mobile Inventory Model (NMIM), respectively. The EPA requests comment on the model input data used to develop the mobile source emission inventories. These include both the direct inputs to MOVES used to create emission factors and the vehicle miles traveled and vehicle population activity data used to compute the emissions. Alternative activity data may be provided in MOVES county databases or in SMOKE FF10 activity data format. For EIS data submitters, updates to mobile source input databases can be provided via EIS.

- CEMS data differing from NEI values. In most cases, the Continuous Emissions Monitoring System (CEMS) data for 2011 are very close to the values in the 2011 NEI version 1 for specific units. However, there are some cases for which the values are

different, such as when a CEMS only reports for part of the year. The EPA requests comment on the specific instances in which the NEI data and CEMS data are not consistent. A report specifying the sources that differ is provided.

- Stack parameters. The release of emissions from stack-based point sources are characterized with stack height, diameter, temperature, and either flow or velocity. In the 2011 NEI version 1, some sources are not adequately characterized with all of the needed parameters. In some cases, the specified parameters do not seem realistic given the volume of emissions exiting the stack. The EPA requests comment on the stack parameters found in the STKHGT, STKDIAM, STKTEMP, STKFLOW, and STKVEL columns of point source emission inventory flat files. To facilitate review of this information, a stack parameter summary is provided for EGU point sources and for non-EGU point sources other than airports, fires, and commercial marine vessels. For EIS data submitters, updates to stack parameters can be provided via EIS.

- Stack locations. The location of point sources is specified by the values in the LATITUDE, LONGITUDE, and LL\_DATUM columns in point source emission inventory flat files. The EPA seeks comment on these stack locations, which can be especially important in the context of risk modeling. Stack locations are included in the stack parameter summary. For EIS data

submitters, updates to stack locations can be provided via EIS.

- Existing control techniques. The 2011 NEI version 1 includes information on emissions control techniques listed in terms of control codes submitted to the EIS. These are listed in the CONTROL\_IDS and CONTROL\_MEASURES columns in the emission inventory data sets, with levels of reduction in the ANN\_PCT\_RED column. Projection of point source emissions to future years is dependent on this information. The EPA seeks comment on whether information on existing controls given in the inventory flat files is incomplete or erroneous. Control techniques independent of pollutant are included in the stack parameter summary. The flat files must be consulted for details of control techniques by pollutant. For EIS data submitters, updates to control techniques can be provided via EIS.

- Boiler design capacity. The EPA seeks comment on the design capacity of boilers as characterized in the DESIGN\_CAPACITY and DESIGN\_CAPACITY\_UNITS columns of point source emission inventory flat files. Design capacity is included in the stack parameter summary. For EIS data submitters, updates to design capacities can be provided via EIS.

- Emissions modeling methods. The EPA is using the SMOKE version 3.5 to prepare data for air quality modeling. The EPA requests comment on the methods by which SMOKE is used to develop air quality model-ready emissions, as illustrated in the

scripts provided with the modeling platform.

- Temporal allocation. Annual emission inventories must be allocated to hourly values prior to air quality modeling. This may be done with temporal profiles in several steps, such as annual-to-month, month-to-day, and day-to-hour. The exact method used depends on the type of emissions being processed. The EPA seeks comment on the allocation of the emission inventories to month, day, and hour for all types of emission processes. In particular, the EPA seeks information that could help improve the temporal allocation of emissions from EGUs, onroad and nonroad mobile sources, and residential wood combustion sources. The EPA seeks to continue to improve temporal allocation factors with additional local and region-specific data. In addition to providing temporal allocation data as SMOKE input files, spreadsheets containing temporal allocation factors and cross references are provided for readability.

- Spatial surrogates. Spatial surrogates are used to allocate county-level emissions into grid cells used for air quality modeling. The EPA requests comment on the spatial surrogates used in the 2011 emissions modeling platform. Plots of spatial surrogates and a spreadsheet containing the spatial cross reference data are provided for readability.

- Chemical speciation. Prior to air quality modeling, the pollutants in the emission inventories must be converted into

the chemical species used by the air quality model using speciation profiles. The speciation profiles in the 2011 emissions modeling platform are consistent with version 4.5 of the SPECIATE database. The EPA requests comment on the speciation profiles used in the 2011 modeling platform, as well as any information that could help improve the speciation of oil and gas emissions in both the eastern and western United States. In addition to providing chemical speciation data as SMOKE input files, spreadsheets containing chemical speciation factors and cross references are provided for readability.

To aid in the interpretation of the provided data files and how they relate to the aspects of the data on which the EPA is requesting comment, the EPA has provided in the docket a document describing the information included in the provided data files.

Dated: November 20, 2013.

Mary Henigin, Acting Director,  
Office of Air Quality Planning and Standards.

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