

# Emissions Inventory Development Resources

Calendar year 2012

## **(1) Central location for EPA's Emissions Inventory Program:**

Clearinghouse for Inventories and Emissions Factors: <http://www.epa.gov/ttnchie1/>

## **(2) PROCEDURES: Emissions assessment and estimation**

### Emission Inventory Improvement Program (EIIP) Documentation, Volumes 1-9

- Includes emissions estimation procedures for point, area (nonpoint), and mobile sources.
  - See <http://www.epa.gov/ttn/chief/eiip/techreport/>
- The EIIP documentation for mobile sources (volume 4) is out of date because it refers to previous versions of EPA emission models.
  - The current onroad emissions model is MOVES2010b. The model, technical documentation, and guidance on the use of MOVES can be found here: <http://www.epa.gov/otaq/models/moves/index.htm>
    - See also using MOVES for modeling through the latest version of the Sparse Matrix Operator Kernel Emissions (SMOKE) system: <http://www.smoke-model.org/index.cfm>
  - The current nonroad emissions model is NONROAD2008. The model and technical documentation can be found here: <http://www.epa.gov/otaq/nonrdmdl.htm>
- The EIIP documentation for the biogenic sources (volume 5) is out of date because it does not refer to the latest biogenic models:
  - BEIS3: <http://www.epa.gov/AMD/biogen.html> (available through the SMOKE system: <http://www.smoke-model.org/index.cfm>)
  - MEGAN: <http://acd.ucar.edu/~guenther/MEGAN/MEGAN.htm>
  - GLOBEIS: <http://www.globeis.com/>

### Emissions Inventory Guidance for NAAQS and Regional Haze

- “Emissions Inventory Guidance for Implementation of Ozone and Particulate Matter National Ambient Air Quality Standards (NAAQS) and Regional Haze Regulations” (August 2005): This document provides guidance on how to develop emission inventories to meet State Implementation Plan (SIP) requirements for complying with the 8-hour ozone NAAQS, the revised particulate matter (PM) NAAQS, and the regional haze regulations. See <http://www.epa.gov/ttn/chief/eidocs/eiguid/index.html>.
- Section 17 of the “Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for Ozone, PM2.5, and Regional Haze” (April 2007) available at: [http://www.epa.gov/scram001/guidance\\_sip.htm](http://www.epa.gov/scram001/guidance_sip.htm).

- Since the two documents listed above have not been revised recently, they do not refer to newer versions of mobile source models. The same corrections listed above for the EIP documentation for mobile sources apply to these guidance documents.
- The Office of Transportation and Air Quality (OTAQ) provides separate guidance on the use of MOVES for State Implementation Plans. See <http://www.epa.gov/otag/models/moves/index.htm> and look for the section on “Using MOVES for SIP and Conformity Purposes”.
  - Technical guidance on using MOVES for SIPs and regional transportation conformity analyses is provided in this document: <http://www.epa.gov/otag/models/moves/documents/420b12028.pdf>

### Emission Factors

- Emission factors are a key input to building emissions inventories. The EPA emission factor resources are available from the Factor Information Retrieval System (WebFIRE) and AP-42, and both can be found by selecting “Emissions Factors” from the main CHIEF website listed in number (1) above. Note that AP-42 is not an appropriate source of emission factors for mobile sources other than road dust.
- As part of the 2011 NEI development process, EPA is making available (during 2012) unit-specific data developed through HAP regulatory rule development. EPA has not yet incorporated these data into WebFIRE. These data are posted as part of the 2011 NEI plan at <http://www.epa.gov/ttn/chief/net/2011inventory.html>.

### Local-scale emission inventory development

- In 2010, EPA completed a project to assess the building of multi-pollutant inventories for local-scale efforts. A project description and the final report that documents the recommended actions for state and local agencies that want to develop local-scale emissions inventories is available at [http://www.epa.gov/ttn/chief/local\\_scale/index.html](http://www.epa.gov/ttn/chief/local_scale/index.html).

See also “Emissions Projections” section, below

### **(3) EMISSIONS DATA: available, in development, and documentation**

#### Emissions Inventory System (EIS)

- 2008 NEI (version 2) released March 2012. This is a selection of data that blends state data with EPA data to create the most comprehensive inventory possible at this time for 2008.
- 2008 state-submitted data
- 2008 EPA estimates
- 2009 state-submitted data
- 2010 state-submitted data

- Location: Must request access at <http://www.epa.gov/ttn/chief/eis/access.pdf>. After access has been granted, the gateway is available at <https://eis.epa.gov/eis-system-web>.
- For instructions on how to create emissions summaries, see:
  - Online EIS training “Reports – May 2012” at <http://www.epa.gov/ttn/chief/eidocs/training.html>
  - EIS Quick Reference “EIS quick reference – county & facility.pdf”

2008 NEI Documentation, including EPA criteria/HAP datasets and HAP augmentation procedures

- Available resources
  - 2008 EPA nonpoint emissions estimates
  - 2008 EPA Rail, Locomotive, and C1/C2 Marine estimates (includes ports) and shapefiles that allocate emissions
- Location: <http://www.epa.gov/ttn/chief/net/2008inventory.html#inventorydoc>

EGU emissions data from continuous emissions monitors (CEMs)

- CO<sub>2</sub>, NO<sub>x</sub>, SO<sub>2</sub>, and heat input data from EGUs from the Clean Air Markets Division of OAR/OAP at EPA. Heat input data can be used to estimate hourly emissions of other pollutants using emission factors.
- Location: <http://camddataandmaps.epa.gov/gdm/>  
Select “Data Sets and Published Reports”

2011 NEI Development approach and EPA datasets and methods. See

<http://www.epa.gov/ttn/chief/net/2011inventory.html>. Information is posted as is available.

- Draft point source emissions estimates for 2011: EGUs, landfills, airports, rail yards, ports
- Draft nonpoint and non-road emissions estimates for 2011: Institutional/Commercial fuel combustion, Non-wood residential heating, Residential wood combustion, Printing/publishing, Oil & gas production, Paved and unpaved roads, Mining and quarrying, Gasoline Distribution stages I and II, Locomotives, Agricultural tilling, Agricultural fires, human cremation, dry cleaning, open burning, portable fuel containers, construction dust, architectural coatings, industrial surface coatings, consumer solvents, pesticide application, publically owned treatment works, fertilizer application, and agricultural livestock.
- Onroad MOVES input databases
- Updated emission factor recommendations for select industries that have newer (than AP-42) and unit-specific data. These factors will be primarily for HAPs, but in some cases may include VOC, PM, or SO<sub>2</sub>. Includes revised PM<sub>2.5</sub> factor from natural gas combustion.

2007 and 2008 modeling platform.

- EPA is developing a multi-pollutant (criteria and HAP pollutants) modeling platform based on the 2008 NEI version 2. Currently on hold.

- Inventories for 2007, which for stationary sources are largely based on the 2008 NEI version 2. EGU, fires, mobile source, and biogenic emissions are specific for 2007. Enhancements have been made to these inventories that cause some differences from the 2008 NEI to make the data more suitable for regulatory modeling applications. Website and data expected late fall, 2012.
- Emissions modeling ancillary data, including temporal, speciation, and grid-cell allocation factors.
  - Planned updates to use SPECIATE 4.3 for VOC and PM speciation. Planned support of updated PM<sub>2.5</sub> speciation mechanism available in the latest version of the Community Multiscale Air Quality (CMAQ) model.
  - Updated spatial surrogates using the 2010 census and other newer datasets including shapefiles for ports and locomotives developed for the 2008 NEI.

#### **(4) EMISSIONS PROJECTIONS (future years)**

##### Emissions Inventory Guidance for NAAQS and Regional Haze

- Section 17.6 of the “Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for Ozone, PM<sub>2.5</sub>, and Regional Haze” (April 2007) available at: [http://www.epa.gov/scram001/guidance\\_sip.htm](http://www.epa.gov/scram001/guidance_sip.htm).

##### 2007 modeling platform – future year estimates

- EPA is developing 2020 future-year emissions estimates for on-the-books federal measures. These projections will be consistent with the 2007 base year and will include emissions from criteria pollutants and select HAPs. The resulting projected data are expected to be available by the end of calendar year 2012. These data will be available in the format needed for use in the SMOKE system to process for use in air quality models. The website is <http://www.epa.gov/ttn/chief/emch/index.html>.
- The underlying data used to project the emissions to the future are in development during 2012.

##### 2005 modeling platform – future year estimates

- Future-year emissions estimates that are consistent with the 2005 modeling platform are available. The most updated data include:
  - 2012 and 2014 projections created for the Cross-State Air Pollution final rule. These data have been enhanced based on public comments as part of the rule making process.
  - 2016 projections created for the Mercury and Air Toxics Standards (MATS) Proposed and Final Rules, including mercury emissions projections. These projections are not entirely consistent with the 2012, 2014, or 2030 projections listed here.
  - 2020 data used for the Proposed PM NAAQS
  - 2030 emissions projections created for the Heavy Duty Greenhouse Gas rule. These projections are not entirely consistent with the 2012, 2014, or 2030 data listed above.
- Data are currently available at <http://www.epa.gov/ttn/chief/emch/index.html>.