National Emissions Inventory (NEI)

The National Emissions Inventory (NEI) is a comprehensive and detailed estimate of air emissions of criteria pollutants, criteria precursors, and hazardous air pollutants from air emissions sources. The NEI is released every three years based primarily upon data provided by State, Local, and Tribal air agencies for sources in their jurisdictions and supplemented by data developed by the US EPA. The NEI is built using the Emissions Inventory System (EIS) first to collect the data from State, Local, and Tribal air agencies and then to blend that data with other data sources.

NEI point sources include emissions estimates for larger sources that are located at a fixed, stationary location. Point sources in the NEI include large industrial facilities and electric power plants, airports, and smaller industrial, non-industrial and commercial facilities. A small number of portable sources such as some asphalt or rock crushing operations are also included. Some states voluntarily also provide facilities such as dry cleaners, gas stations, and livestock facilities, which are otherwise included in the NEI as nonpoint sources. The emissions potential of each facility determines whether that facility should be reported as a point source, according to emissions thresholds set in the Air Emissions Reporting Rule (AERR). NEI Point Sources are all included in the EIS Point Data Category.

NEI nonpoint sources include emissions estimates for sources which individually are too small in magnitude to report as point sources. These emissions sources are included in the NEI as a county total or tribal total (for participating tribes). Examples include residential heating, commercial combustion, asphalt paving, and commercial and consumer solvent use. NEI nonpoint sources are all included in the EIS Nonpoint Data Category. Starting in 2020, all fire sources are also included as nonpoint.

NEI onroad sources include emissions from onroad vehicles that use gasoline, diesel, and other fuels. These sources include light duty and heavy duty vehicle emissions from operation on roads, highway ramps, and during idling. Except for California, the US EPA uses the MOVES model to compute onroad source emissions based on model inputs provided by State, Local, and Tribal air agencies. California provides emissions to the US EPA based on a California-specific model. The MOVES model also computes refueling emissions, which are included in the EIS Nonpoint Data Category. All other onroad source emissions are included in the EIS Onroad Data Category.

NEI nonroad sources include off-road mobile sources that use gasoline, diesel, and other fuels. Source types include construction equipment, lawn and garden equipment, aircraft ground support equipment, locomotives, and commercial marine vessels. For many nonroad sources, the EPA uses the MOVES-NONROAD model and these sources are included in the EIS nonroad Data Category. Starting with the 2008 NEI, some nonpoint sources are included in other EIS Data Categories. Aircraft engine emissions (occurring

during landing and takeoff operations) and the ground support and power unit equipment are included in the EIS Point Data Category at airport locations. Locomotive emissions at rail yards are also included in the EIS Point Data Category. Emissions of other locomotive emissions and of commercial marine vessel emissions (both underway and port emissions) are included in the EIS Nonpoint Data Category.

NEI fire sources include the major sources of fires: Wild Land Fires (WLF) which is composed of both wild and prescribed fires, and agricultural fires. Taken as a sum, agricultural fires, prescribed fires, and wild fires make up the total emissions that comprise the "National Fire Emissions Inventory" (NFEI). While EPA's estimates of WLF emissions are developed in a day-specific format, these emissions are no longer provided in the "Events" category in the NEI. Starting with the 2020 NEI, these WLF estimates are aggregated to annual and county levels, and are included as part of the nonpoint data category. EPA estimates NFEI emissions by using a combination of satellite detects and activity data provided by SLT agencies, as well as some forestry agencies.

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