EPA_ANTHRO_EMIS User Guide

The EPA ANTHRO_EMIS tool allows the user to create WRF-Chem compatible hourly anthropogenic emission input files from Sparse Matrix Operator Kernel (SMOKE) Modeling System netcdf output.

A sample input data set containing the U.S. EPA 2014v2 emissions is available for download on the NCAR/ACOM website.

The NEI 2014v2 data have been provided by Barron Henderson and Alison Eyth, U.S. EPA Office of Air Quality Planning & Standards (OAQPS), Research Triangle, NC.

When using this data set, please include the following acknowledgement:
We acknowledge Alison Eyth and Barron H. Henderson at the U.S. Environmental Protection Agency (EPA) for making SMOKE outputs available and to Gabriele Pfister and Stacy Walters at the National Center for Atmospheric Research (NCAR) and Stu McKeen at the National Oceanic and Atmospheric Administration (NOAA) for developing and providing tools to integrate SMOKE emissions into WRF-Chem."

Suggested references for the provided NEI 2014v2 data set:
The provided input emissions are based on the criteria pollutant and precursor emissions from the 2014 EPA platform (US EPA, 2018a) as implemented for the National Air Toxics Assessment (US EPA 2018b)."

 US EPA, 2018a. Preparation of Emissions Inventories for the Version 7.1 2014 Emissions Modeling Platform for the National Air Toxics Assessment (Technical Support Document). U.S. Environmental Protection Agency, Research Triangle Park, North Carolina.
url: https://www.epa.gov/air-emissions-modeling/2014-version-71-platform

US EPA, 2018b. EPA's 2014 National Air Toxics Assessment (Technical Support Document). U.S. Environmental Protection Agency, Research Triangle Park, North Carolina.
url: https://www.epa.gov/national-air-toxics-assessment/2014-nata-technical-support-document

The input data set contains emissions for the entire year 2014 in the following files and directories:

sectorlist_2014fd_nata	file containing date mapping for different sectors
smk_merge_dates_2014.txt	date translation file
./all	combined emissions for all area source sectors
./cmv_c3	point emissions from shipping
./pt_oilgas	point sources for the oil and gas sector
./ptegu	point emissions for electric generation units
./ptnonipm	point sources not included in ptegu
./othpt	point sources for Canada, Mexico and offshore activities

The emissions contain anthropogenic sources only and do not include fires or biogenic emissions. The area source sector is provided at 12km x 12km spatial resolution, which are spatially mapped to the WRF domain. The point emissions are provided for individual point sources and also need an additional file, which includes information such as location and stack height for each point source (included in the download).

While the tool will work on general SMOKE netcdf output, we only provide user support for use of the tool with the provided NEI 2014v2 data set and only for creating emissions for the year 2014.
For information on compiling and running the EPA anthro_emis tool see the README included in the download.

Any questions related to the tool should be directed to the NCAR ACOM Discussion Forum:
https://www2.acom.ucar.edu/wrf-chem/discussion-forum

_____

Development Team:

Lead: Gabriele Pfister
NCAR Atmospheric Chemistry Observations and Modeling Laboratory (ACOM), Boulder CO

Software Design and Development: Stacy Walters
NCAR Atmospheric Chemistry Observations and Modeling Laboratory (ACOM), Boulder CO

Emission Input Data Sets and Guidance: Barron Henderson and Alison Eyth
U.S. EPA Office of Air Quality Planning & Standards (OAQPS), Research Triangle, NC

Scientific Collaboration: Stu McKeen
NOAA, Earth Systems Research Laboratory (ESRL), Boulder, CO