AVERT
AVoided Emissions and geneRation Tool
www.epa.gov/avert

Downloading AVERT Files for Use in SMOKE

US Environmental Protection Agency
State Climate and Energy Program

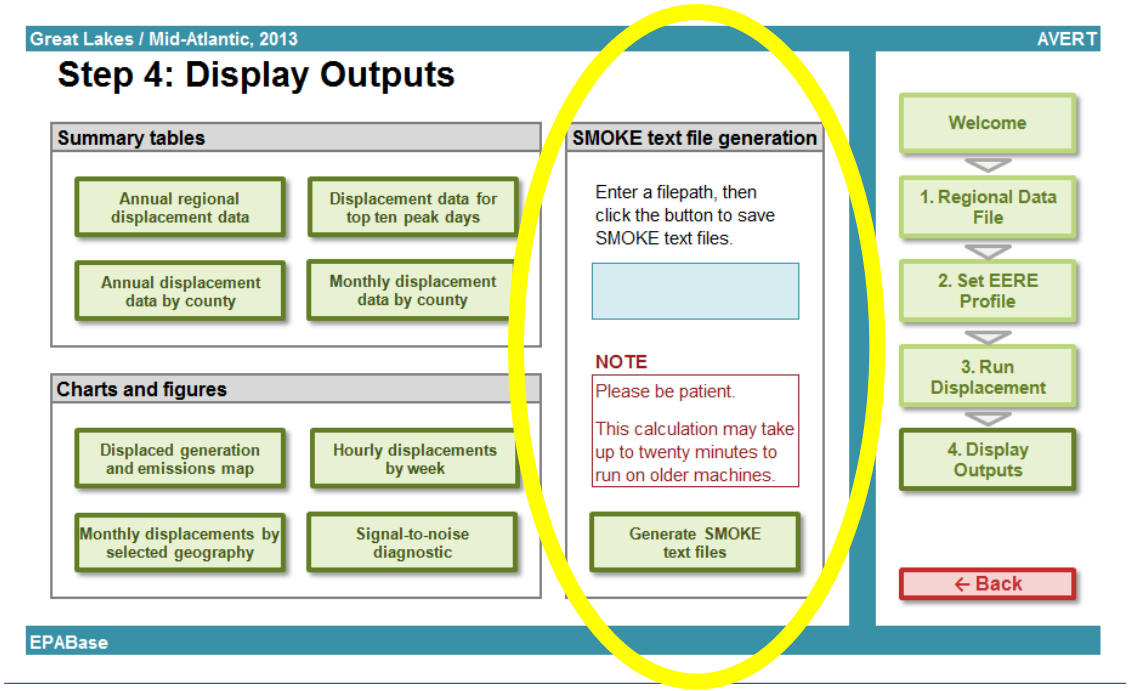
EPA United States Environmental Protection Agency

Downloading AVERT Files for Use in SMOKE
Overview

- The AVERT Main Module can produce output files for the **Sparse Matrix Operator Kernel Emissions (SMOKE)** modeling system, which is designed to create gridded, speciated, hourly emissions for input into air quality models such as CMAQ, REMSAD, CAMX and UAM.
- For more information about SMOKE, visit https://www.cmascenter.org/smoke/

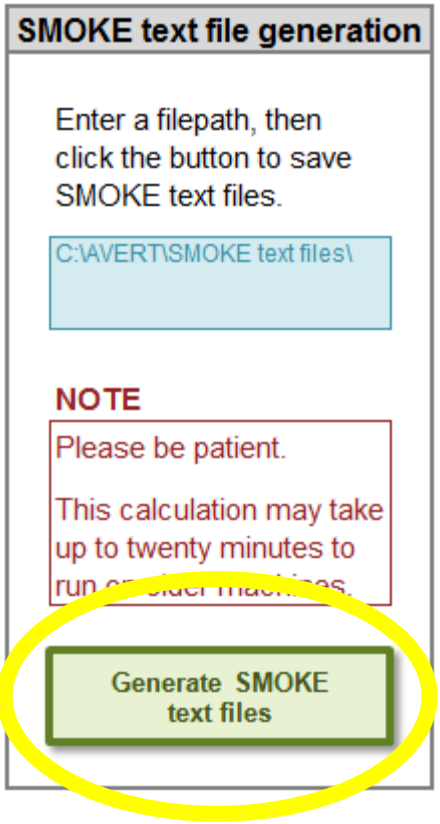
Downloading AVERT Files for Use in SMOKE
Select a Filepath

- AVERT's SMOKE text file generation can be found in Step 4: Display Outputs
- After running a displacement scenario, double-click the blue box to select the location where you would like to save the files



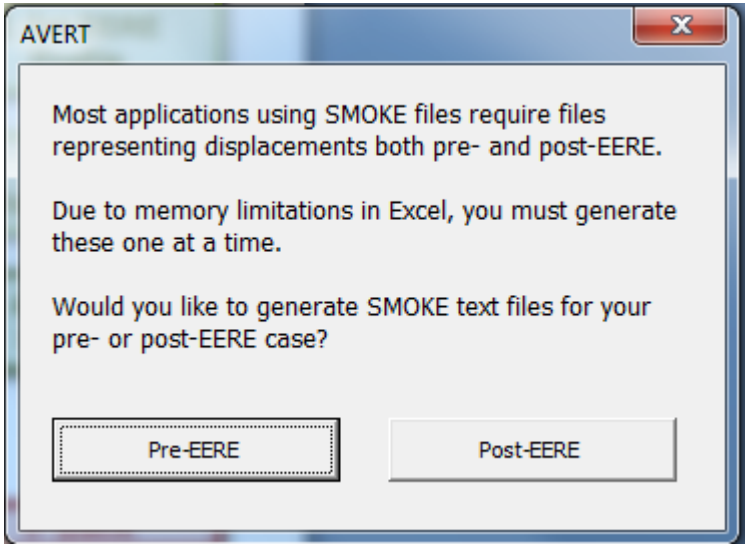
Downloading AVERT Files for Use in SMOKE
Generate SMOKE Text Files

- After entering a filepath, click the button labeled "Generate SMOKE text files"



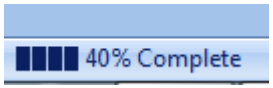
Downloading AVERT Files for Use in SMOKE
Generate SMOKE Text Files

- A dialog box will appear asking you whether you want to generate SMOKE files for your pre-EERE or post-EERE case

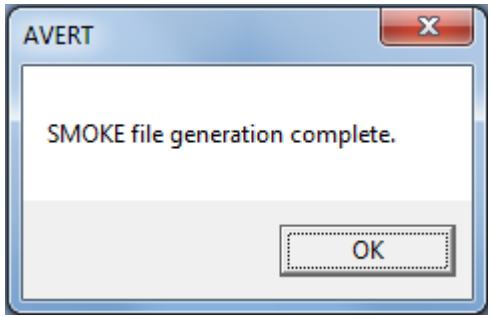


Downloading AVERT Files for Use in SMOKE
Generate SMOKE Text Files

- After you select either pre-EERE or post-EERE, the file generation process begins, marked by an indicator in the task bar at the lower left hand corner of the window.



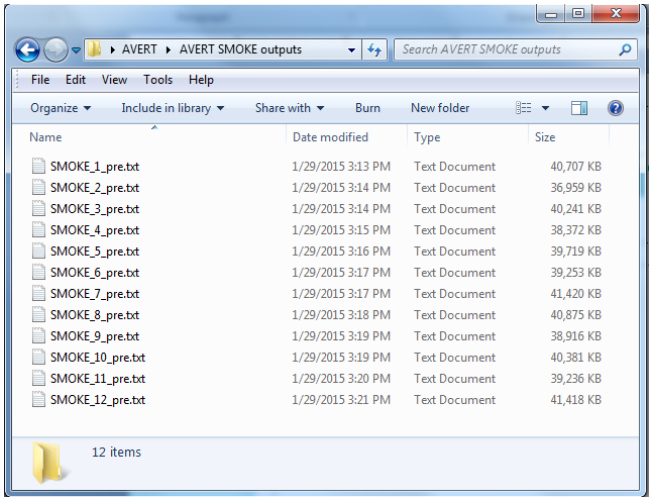
- A dialog box will appear when the process is complete. If you want both pre-EERE and post-EERE files, repeat the process.

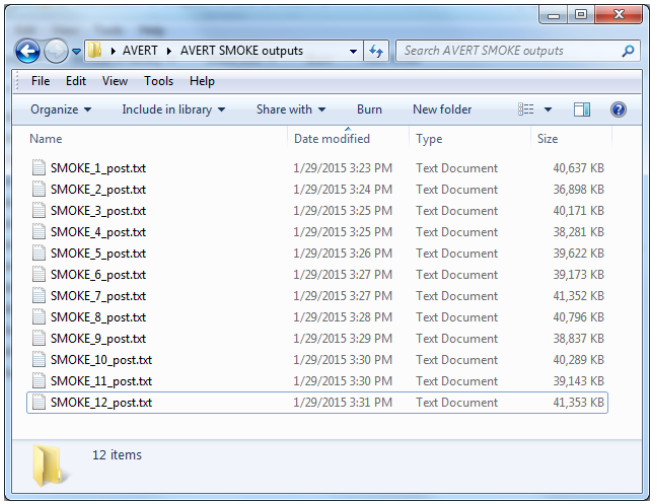


Downloading AVERT Files for Use in SMOKE

Locate SMOKE Text Files

- The SMOKE output files will appear in the folder that you selected on slide 3 (Step 4: Display Outputs)
- Files are now ready for use in SMOKE

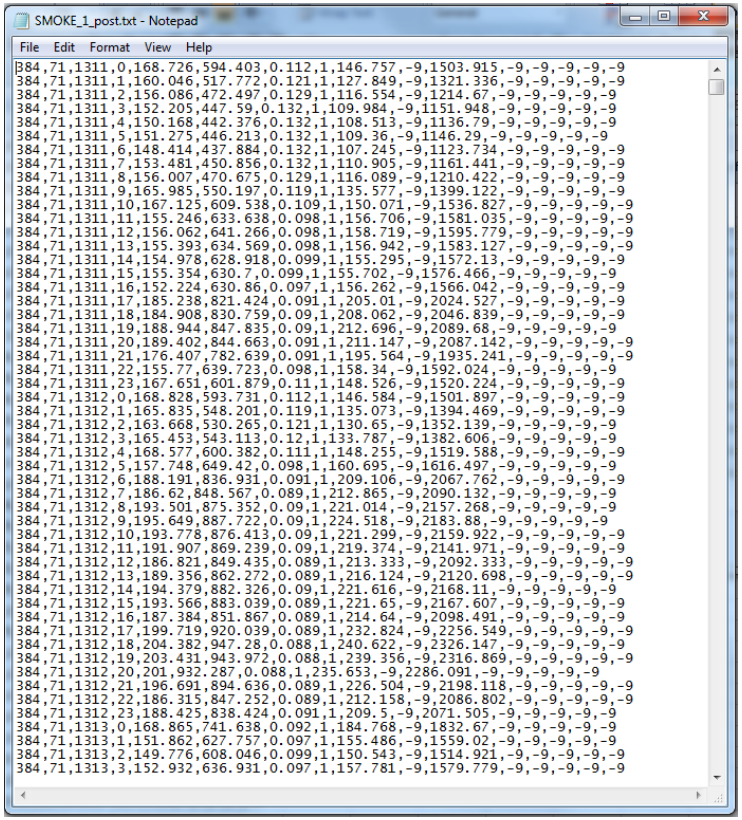




Downloading AVERT Files for Use in SMOKE

About File Format

- Files are generated in Continuous Emissions Modeling (CEM) format—a format recognized by SMOKE
- Files have a .txt extension and can be viewed in a text editor such as Notepad
- Each row represents a single hour of data
- Values are comma-separated



Downloading AVERT Files for Use in SMOKE

About File Format

Comma-separated fields in CEM format:

Position	Name	Type	Description
A	ORISID	Char (6)	DOE Plant Identification Code (required) (should match the same field in the PTINV file in IDA format)
B	BLRID	Char (6)	Boiler Identification Code (required) (should match the same field in the PTINV file in IDA format)
C	YYMMDD	Int	Date of data in YYMMDD format (required)
D	HOUR	Integer	Hour value from 0 to 23
E	NOXMASS	Real	Nitrogen oxide emissions (lb/hr) (required)
F	SO2MASS	Real	Sulfur dioxide emissions (lb/hr) (required)
G	NOXRATE	Real	Nitrogen oxide emissions rate (lb/MMBtu) (not used by SMOKE)
H	OPTIME	Real	Fraction of hour unit was operating (optional)
I	GLOAD	Real	Gross load (MW) (optional)
J	SLOAD	Real	Steam load (1,000 lbs/hr) (optional)
K	HTINPUT	Real	Heat input (mmBtu) (required)
L	HTINPUTMEASURE	Character(2)	Code number indicating measured or substituted, not used by SMOKE
M	SO2MEASURE	Character(2)	Code number indicating measured or substituted, not used by SMOKE
N	NOXMMEASURE	Character(2)	Code number indicating measured or substituted, not used by SMOKE
O	NOXRMEASURE	Character(2)	Code number indicating measured or substituted, not used by SMOKE
P	UNITFLOW	Real	Flow rate (ft3/sec) for the Boiler Unit (optional; must be present for all records or not any records – not yet used by SMOKE)

Excerpted from the SMOKE v3.6 User's Manual, found at
https://www.cmascenter.org/smoke/documentation/3.6/manual_smokev36.pdf

Downloading AVERT Files for Use in SMOKE

More Information

- AVERT User Manual, found at http://epa.gov/avert/
- SMOKE v3.6 User's Manual, found at https://www.cmascenter.org/smoke/