



Industrial, Commercial, and Institutional (ICI) Fuel Combustion Tool

User's Guide
Version 1.4

December 2015

Developed by:

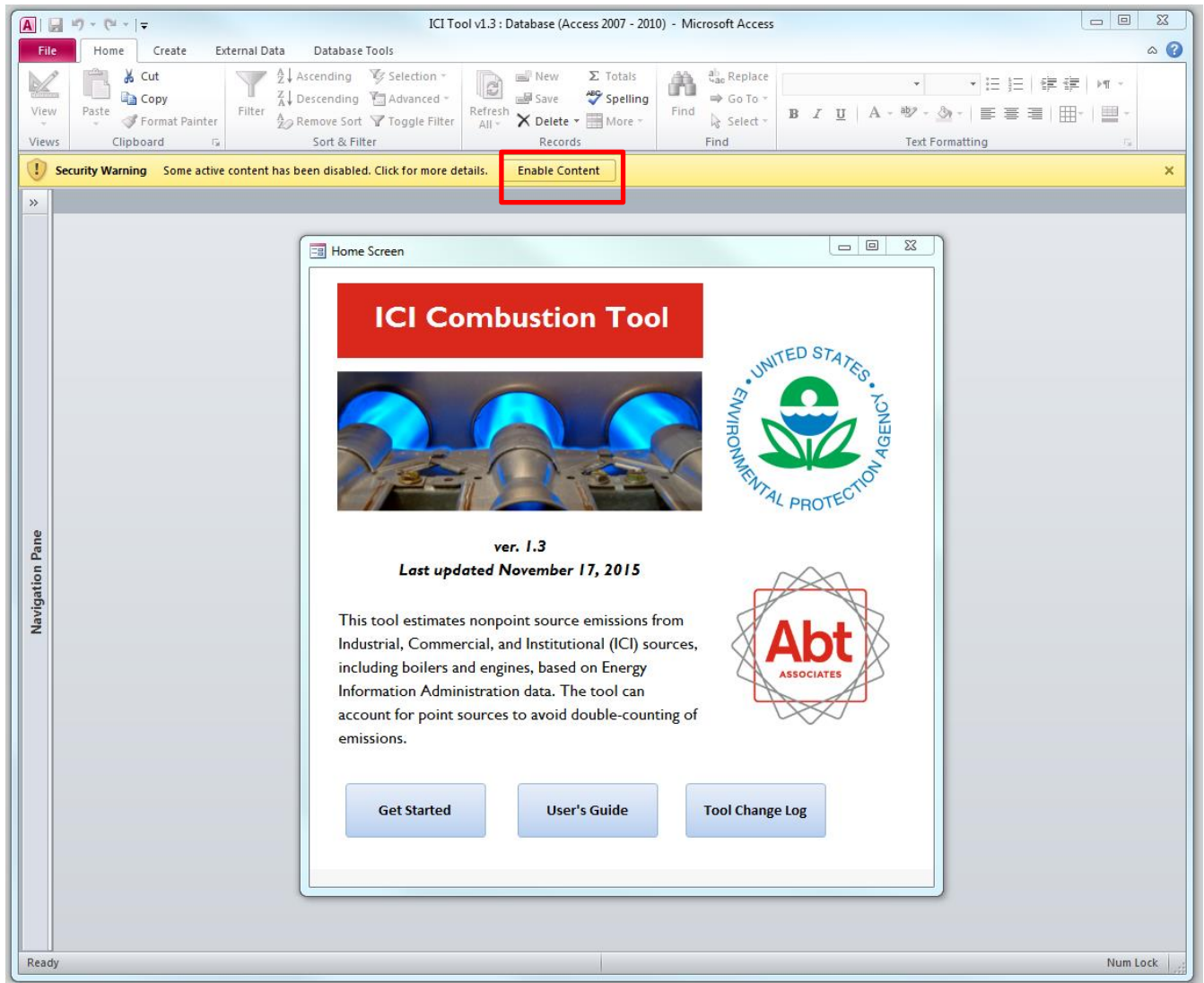
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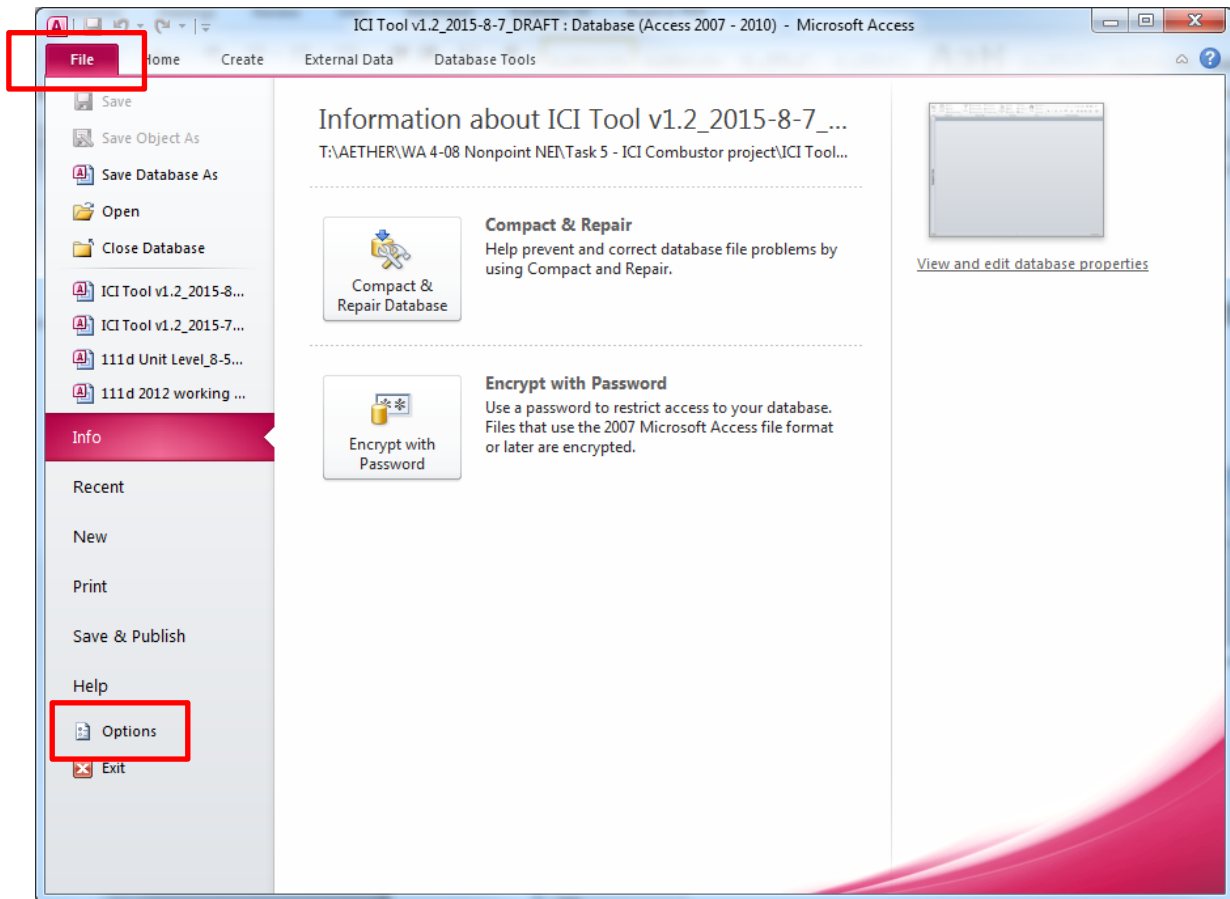
1. Getting Started

The ICI Combustion Tool is designed to run in Microsoft Access 2007 or later. When you first open the ICI Combustion Tool, you may see a yellow ribbon at the top of the document. Click the button that reads **“Enable Content.”**

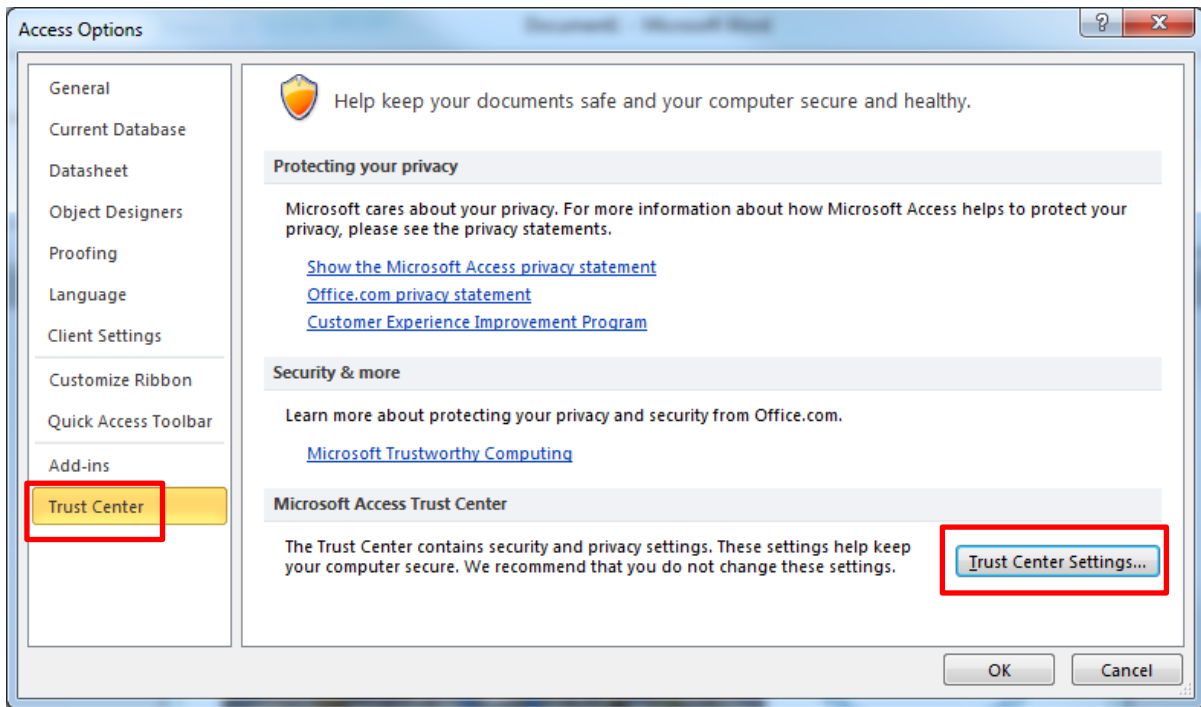


Next, make sure your version of Microsoft Access is set up to run macros.

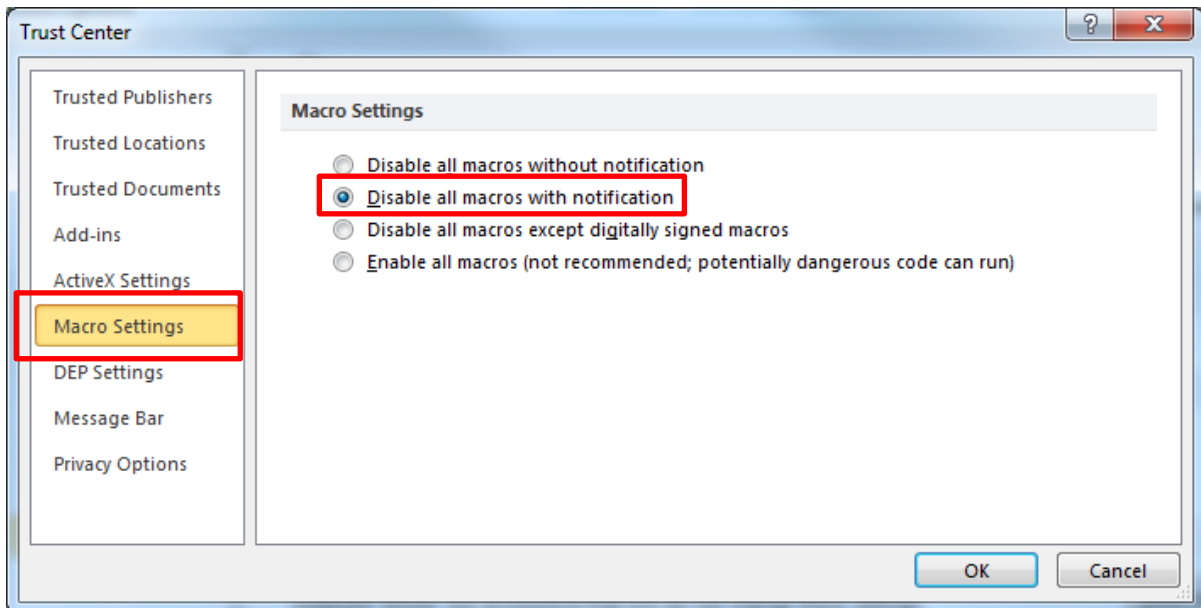
Click **“File”** at the top left of the screen. Then click **“Options”**.



On the window that opens, click **“Trust Center”** and then **“Trust Center Settings...”**

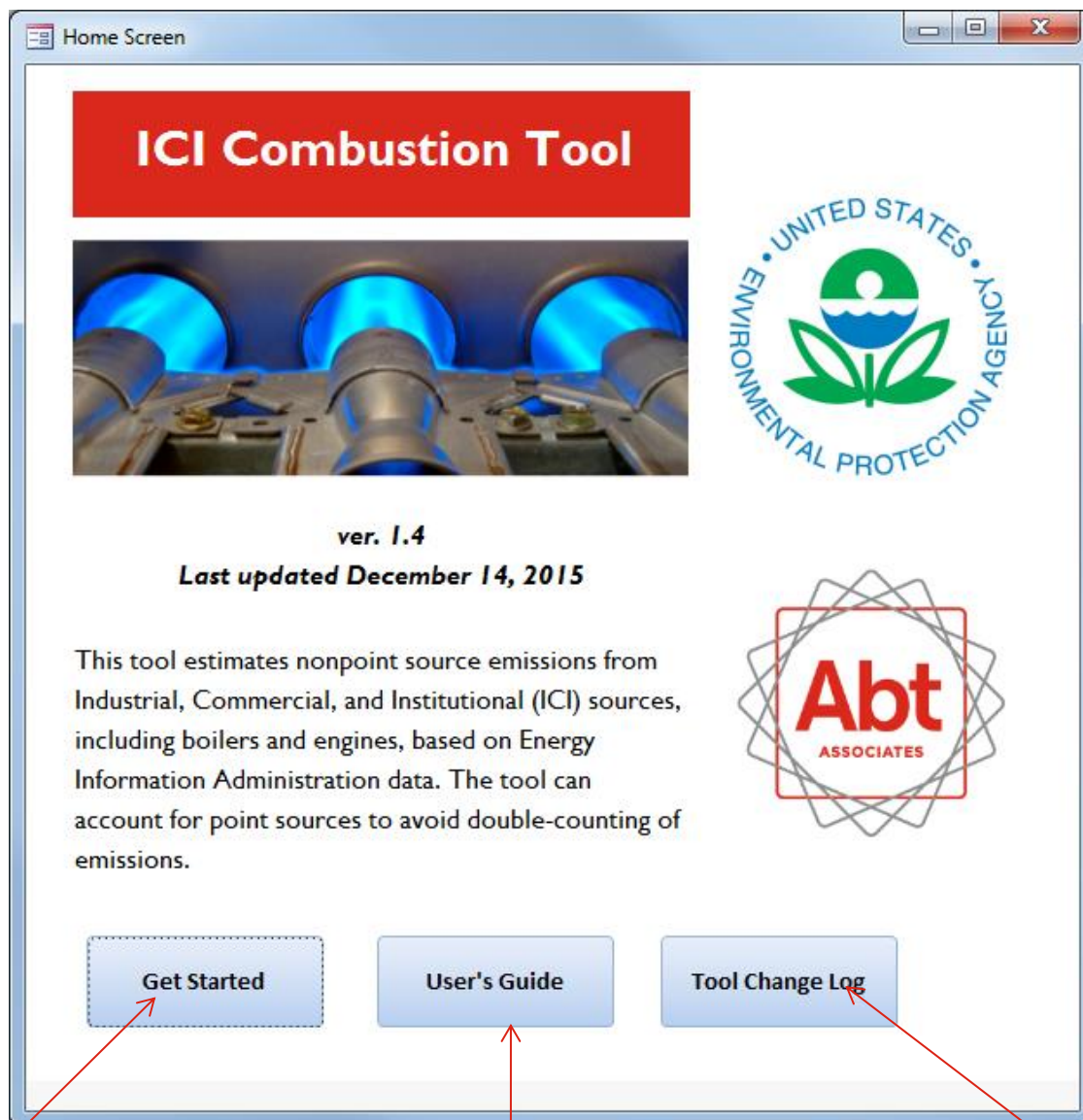


On the next window that opens, click **“Macro Settings.”** Then we recommend that you select **“Disable all macros with notification.”** Then click **OK.**



2. Using the ICI Combustion Tool

2.1 Home Screen



Click this button to get started with the ICI Tool.

Click this button for a copy of this User's Guide.

Click this button for a table with the tool change log.

2.2 Select States

On this screen, select the state(s) for which to estimate ICI nonpoint emissions.

ICI Combustion Tool

Select the state(s) to include in the emissions estimation output table.

Next: Input Point Source Data

Select All States Clear All States

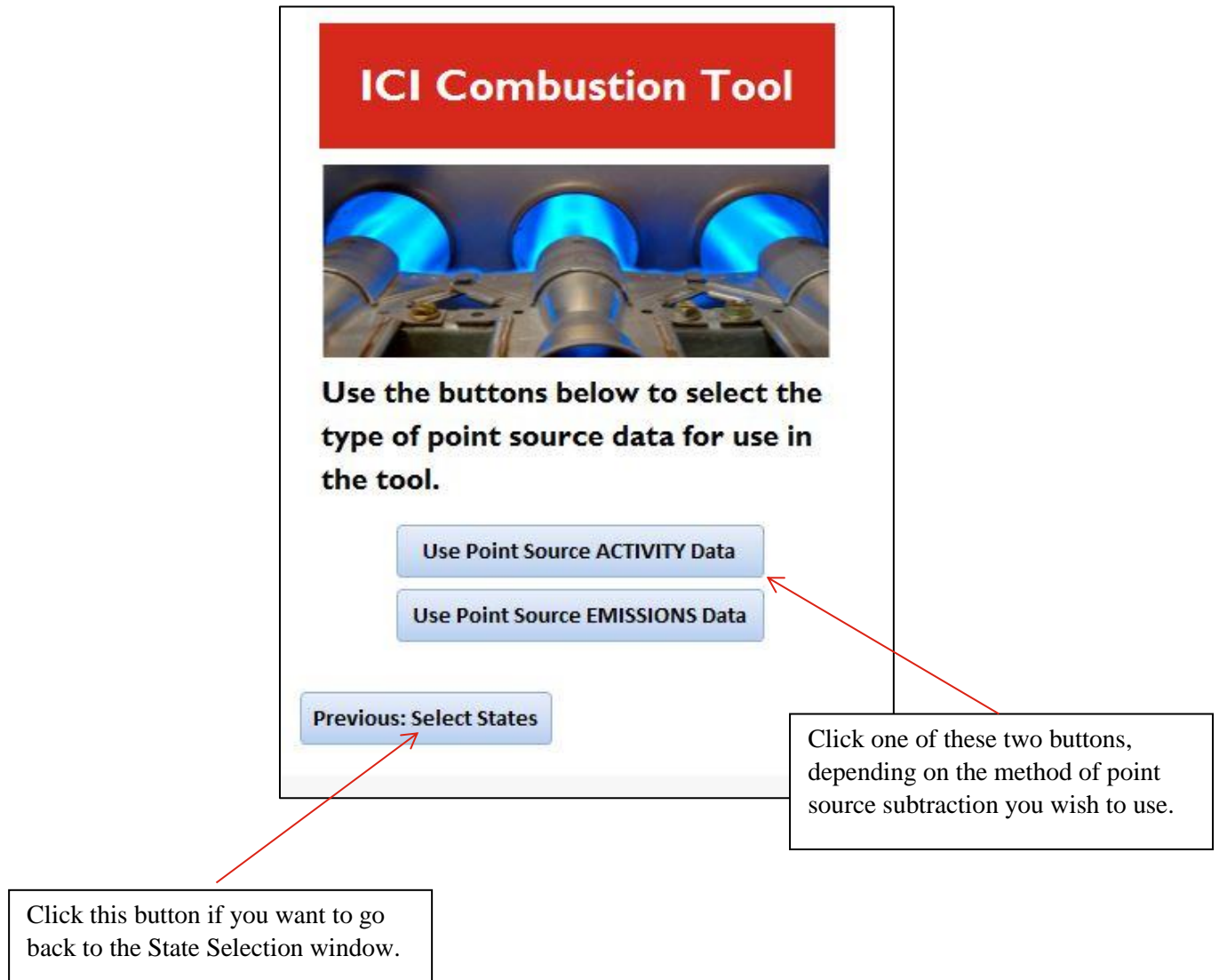
Alaska	<input type="checkbox"/>
Alabama	<input type="checkbox"/>
Arkansas	<input type="checkbox"/>
Arizona	<input type="checkbox"/>
California	<input type="checkbox"/>
Colorado	<input type="checkbox"/>
Connecticut	<input type="checkbox"/>
District of Columbia	<input type="checkbox"/>
Delaware	<input type="checkbox"/>
Florida	<input type="checkbox"/>
Georgia	<input type="checkbox"/>
Hawaii	<input type="checkbox"/>
Iowa	<input type="checkbox"/>

Click this button to move to the next screen to input point source data.

2.3 Select Point Source Subtraction Method

In this window, select the method for point source subtraction. The tool can perform point source subtraction using *either* activity data or emissions data. The user must supply the point source data.

Note: if you do not wish to subtract point sources, or you do not have point source data, it does not matter which method you choose.



2.4 Point Source ACTIVITY Data

If you selected “Use Point Source ACTIVITY Data” on the previous screen, you will see the screen below.

Use this screen to export a template of point source activity data to Excel, and also to re-import that template into the tool, once it has been filled out.

The tool can perform point source subtraction using county- or state-level data. If county-level data are available, they are used first.

The screenshot shows the "ICI Combustion Tool" interface. On the left, there is a red header with the tool name and an image of a combustion engine. Below the image, text instructs the user to use buttons on the right to import point source activity data. At the bottom left, there are two buttons: "Previous: Select PS Data" and "Next: Edit Assumptions". On the right, there are two sections: "County Data" and "State Data". Each section contains three buttons: "Export [Level]-Level Point Activity Template", "Import [Level]-Level Point Source Activity Data", and "Reset [Level]-Level Point Source Activity Data".

ICI Combustion Tool

Use the buttons at the right to import point source **ACTIVITY** data for use in the tool.

Point Source Data Instructions

Previous: Select PS Data Next: Edit Assumptions

County Data

- Export County-Level Point Activity Template
- Import County-Level Point Source Activity Data
- Reset County-Level Point Source Activity Data

State Data

- Export State-Level Point Activity Template
- Import State-Level Point Source Activity Data
- Reset State-Level Point Source Activity Data

Click this button to export a blank template of county-level point source activity data to Excel. Fill this template out, but you must not change the filename or the names of the column headings.

Once you have filled out the template of point source activity data, click this button to import the Excel template into the tool. It must be saved in the same folder as the tool.

Click this button to reset the county-level point source activity data. This will set all county-level activity data to 0.

Click this button to return to the previous screen to change the method of point source subtraction.

Once all point source data have been imported into the tool, click this button to edit the assumptions used in the tool.

Optional: If county-level point source data are unavailable, state-level data can be used.

2.5 Point Source EMISSIONS Data

If you selected “Use Point Source EMISSIONS Data” on the previous screen, you will see the screen below.

Use this screen to export a template of point source emissions data to Excel, and also to re-import that template into the tool, once it has been filled out.

The tool can perform point source subtraction using county- or state-level data. If county-level data are available, they are used first.

The screenshot shows the "ICI Combustion Tool" interface. On the left, a red header reads "ICI Combustion Tool" above an image of industrial burners. Below the image, text says "Use the buttons at the right to import point source EMISSIONS data for use in the tool." At the bottom left are two buttons: "Point Source Data Instructions", "Previous: Select PS Data", and "Next: Edit Assumptions". On the right, under the heading "County Data", are three buttons: "Export County-Level Point Emissions Template", "Import County-Level Point Source Emissions Data", and "Reset County-Level Point Source Emissions Data". Below this, under the heading "State Data", are three buttons: "Export State-Level Point Emissions Template", "Import State-Level Point Source Emissions Data", and "Reset State-Level Point Source Emissions Data".

Click this button to export a blank template of county-level point source activity data to Excel. Fill this template out, but you must not change the filename or the names of the column headings.

Once you have filled out the template of point source activity data, click this button to import the Excel template into the tool. It must be saved in the same folder as the tool.

Click this button to reset the county-level point source emissions data. This will set all county-level emissions data to 0.

Click this button to return to the previous screen to change the method of point source subtraction.


Once all point source data have been imported into the tool, click this button to edit the assumptions used in the tool.

Optional: If county-level point source data are unavailable, state-level data can be used.

WARNING: If you choose to use emissions for point source subtraction, you should ensure that you submit emissions data for all PM species. If, for example, you submit emissions only for PM10-FIL, but not PM25-FIL, this could lead to situations where the PM25-FIL emissions are greater than the PM10-FIL emissions, leading to errors when submitting the outputs to CDX.

2.6 Edit Assumptions

ICI Combustion Tool



Use the buttons at the right to edit the assumptions used in the tool.

Previous: Input Point Source Data

Next: Enter Document Header Information

Edit State-Level Energy Data (part I)

Edit State-Level Energy Data (part II)

Coal Distribution: Anthracite and Bit/Subbit

Distillate Fuel: % of Fuel Used by Stationary Sources (part I)

Distillate Fuel: % of Fuel Used by Stationary Sources (part II)

Distillate Fuel: Boiler/Engine Split

LPG: Stationary Source Assumptions

Nonfuel Use Assumptions

Sulfur and Ash Content of Fuels

Click these buttons to edit the assumptions used in the tool. Each button is discussed below.

Click this button to return to choose the point source subtraction method.

Click this button to enter the document header information for the output file.

2.6.1 State-Level Energy Consumption

For the selected state(s), use this screen to update the underlying assumptions about state-level energy use in the industrial and commercial sectors for all fuels except distillate (which is handled in a different window). The default values come from the EIA State Energy Data System (SEDS).

State-Level Energy Consumption

State

Use this form to change the assumptions about the total state energy use. The default values come from the EIA State Energy Data System.

	Industrial	Commercial	
Coal	<input type="text" value="1"/>	<input type="text" value="585"/>	'000 short tons
Natural Gas	<input type="text" value="259,893"/>	<input type="text" value="18,694"/>	million cubic feet
LPG	<input type="text" value="12"/>	<input type="text" value="203"/>	'000 barrels
Kerosene	<input type="text" value="0"/>	<input type="text" value="5"/>	'000 barrels
Residual Fuel	<input type="text" value="0"/>	<input type="text" value="0"/>	'000 barrels
Wood	<input type="text" value="56"/>	<input type="text" value="292"/>	billion Btu

Click this button to reset the assumptions to the default values from SEDS.

2.6.2 State-Level Distillate Consumption

Use this screen to update the underlying assumptions about state-level distillate fuel use in the industrial, commercial, farm, off-highway construction, and oil company sectors in the selected state(s). Distillate fuel use must be entered in units of 1,000 gallons, and must be total fuel use (i.e. not just stationary source use).

State-Level Distillate Consumption

State Alaska

Enter the consumption ('000 gallons) of distillate fuel by sector in the fields below.

	Industrial	Commercial	Farm	Off-Highway Construction	Oil Company
No 1. Distillate	<input type="text" value="24,756"/>	<input type="text" value="29,267"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
No 2. Fuel Oil	<input type="text" value="843"/>	<input type="text" value="9,255"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
No 2. High S Diesel	<input type="text" value="2"/>	<input type="text" value="119"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
No 2. Low S Diesel	<input type="text" value="63,526"/>	<input type="text" value="292"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
No 2. Ultra Low S Diesel	<input type="text"/>	<input type="text" value="9,680"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
No 4. Distillate	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Diesel	<input type="text"/>	<input type="text"/>	<input type="text" value="243"/>	<input type="text"/>	<input type="text"/>
Other Distillate	<input type="text"/>	<input type="text"/>	<input type="text" value="54"/>	<input type="text"/>	<input type="text"/>
Total Distillate	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="11,343"/>	<input type="text"/>

Click this button to reset the assumptions to the default values from EIA distillate sales data.

2.6.3 Coal Distribution Assumptions

Use this screen to input the assumptions about the percentage of coal used in the industrial and commercial sectors in the selected state(s) that is anthracite and bituminous or subbituminous.

Coal Distribution Assumptions

State

Enter the Percentage of Coal Used in the State that is Anthracite and Bituminous/Subbituminous
(must sum to 100% in each sector)

	Industrial	Commercial
Anthracite	<input type="text" value="0.00%"/>	<input type="text" value="0.00%"/>
Bituminous/Subbituminous	<input type="text" value="100.00%"/>	<input type="text" value="100.00%"/>

Reset Default Values For All StatesClose Window

Click this button to reset the default assumption values, which are based on EIA data on state-level coal distribution.

2.6.4 Distillate Stationary Source Assumptions (part 1)

Use this screen to update assumptions about the proportion of distillate fuel used in the selected state(s) by stationary and mobile sources for the industrial and commercial sectors.

Distillate Fuel Stationary Source Assumptions

State

For Each Fuel Type, Enter the Percentage of Total Fuel Used by Stationary Sources and Mobile Sources in the Industrial and Commercial Sectors.

	Industrial		Commercial	
	Stationary	Mobile	Stationary	Mobile
No. 1 Distillate Fuel	<input type="text" value="50.00%"/>	<input type="text" value="40.00%"/>	<input type="text" value="80.00%"/>	<input type="text" value="20.00%"/>
No. 2 Fuel Oil	<input type="text" value="100.00%"/>	<input type="text" value="0.00%"/>	<input type="text" value="100.00%"/>	<input type="text" value="0.00%"/>
No. 2 Diesel	<input type="text" value="15.00%"/>	<input type="text" value="85.00%"/>	<input type="text" value="0.00%"/>	<input type="text" value="100.00%"/>
No. 4 Distillate Fuel	<input type="text" value="100.00%"/>	<input type="text" value="0.00%"/>	<input type="text" value="100.00%"/>	<input type="text" value="0.00%"/>

Click this button to reset the default assumption values, which are based on MOVES modeling.

2.6.5 Distillate Stationary Source Assumptions (part 2)

Use this screen to update assumptions about the proportion of distillate fuel used in the selected state(s) by mobile and stationary sources for the off-highway construction, oil company, and farm sectors.

Distillate Fuel Stationary Source Assumptions

State Alaska

For Each Fuel Type, Enter the Percentage of Total Fuel Used by Stationary Sources and Mobile Sources in the Off-Highway Construction, Oil Company, and Farm Sectors.

	Off-Hwy Construction		Oil Company	
	Stationary	Mobile	Stationary	Mobile
Total Distillate Fuel	<input type="text" value="5.00%"/>	<input type="text" value="95.00%"/>	<input type="text" value="50.00%"/>	<input type="text" value="50.00%"/>

	Farm	
	Stationary	Mobile
Diesel	<input type="text" value="0.00%"/>	<input type="text" value="100.00%"/>
Other Distillate Fuel	<input type="text" value="100.00%"/>	<input type="text" value="0.00%"/>

Click this button to reset the default values.

2.6.6 Distillate Fuel Boiler and Engine Assumptions

The ICI tool uses different emissions factors for distillate boilers and engines. However, the EIA State Energy Data System data only provide total distillate. For this reason, the user must enter an assumption based on the percentage of distillate fuel used by boilers and engines.

Distillate Fuel Boiler and Engine Assumptions

State

Enter the Percentage of Boilers and Engines that Use Distillate Fuel in Each Sector
(must sum to 100% in each sector)

	Industrial	Commercial
Boilers	<input type="text" value="50.00%"/>	<input type="text" value="50.00%"/>
Engines	<input type="text" value="50.00%"/>	<input type="text" value="50.00%"/>

Click this button to reset the assumptions to the default values. Due to a lack of data, the default value for the boiler/engine split is 50/50.

2.6.7 LPG Stationary Source Assumptions

Use this screen to update assumptions about the proportion of LPG used by stationary and mobile sources in the selected state(s).

LPG Stationary Source Assumptions

State

Enter the Percentage of LPG Used by Stationary Sources
and Mobile Sources in the Industrial and Commercial Sectors

	Industrial	Commercial
Stationary	<input type="text" value="91.28%"/>	<input type="text" value="82.28%"/>
Mobile	<input type="text" value="8.72%"/>	<input type="text" value="17.72%"/>

Reset Default Values
For All StatesClose Window

Click this button to reset the assumptions to the default values, which are based on MOVES modeling.

2.6.8 Nonfuel Use Assumptions

Use this screen to update assumptions about the percentage of each fuel source in the selected state(s) that is used for feedstock purposes in industrial processes, rather than for combustion.

Nonfuel Use of Energy Assumptions

State

Enter the Percentage of Energy Resources Used
for Nonfuel (Feedstock) and Fuel (Combustion) Purposes

	Nonfuel (Feedstock)	Fuel (Combustion)
Coal	<input type="text" value="4.00%"/>	<input type="text" value="96.00%"/>
Distillate	<input type="text" value="4.35%"/>	<input type="text" value="95.65%"/>
LPG	<input type="text" value="5.88%"/>	<input type="text" value="94.12%"/>
Natural Gas	<input type="text" value="2.29%"/>	<input type="text" value="97.71%"/>
Residual Oil	<input type="text" value="20.00%"/>	<input type="text" value="80.00%"/>
Kerosene	<input type="text" value="0.00%"/>	<input type="text" value="100.00%"/>

Click this button to reset the assumptions
to the default values from EIA data.

2.6.9 Sulfur and Ash Content of Fuels

Use this form to update the assumptions about the sulfur and ash content of coal, residual oil, and distillate combusted in the selected state(s). Enter the values in percent (not fraction, e.g., 1% = 1). These values are used to calculate the emissions factors for particulate matter and sulfur dioxide for these fuels.

Sulfur and Ash Content of Fuels

State

Enter the Percent (not fraction) of SULFUR for the Following Fuels
Used in the Industrial and Commercial Sectors.

	Industrial	Commercial
Coal - Bituminous/ Subbituminous	<input type="text" value="0.50"/>	<input type="text" value="0.18"/>
Coal - Anthracite	<input type="text" value="0.89"/>	<input type="text" value="0.89"/>
Distillate	<input type="text" value="0.12"/>	<input type="text" value="0.24"/>
Residual Oil	<input type="text" value="1.61"/>	<input type="text" value="1.61"/>

Enter the Percent (not fraction) of ASH for the Following Fuel
Used in the Industrial and Commercial Sectors.

	Industrial	Commercial
Coal - Anthracite	<input type="text" value="13.38"/>	<input type="text" value="13.38"/>

Reset Default Values
for All States

Close Window

Click this button to reset the assumptions
to the default values from EIA data.

2.7 Document Header

The ICI Combustion Tool will output the calculated inventory in EIS format into a separate Microsoft Access database called “ICI Tool Output - EIS Format.mdb”. Use this form to enter the document header information for the staging tables. See the table on the next page for definitions of the fields in the document header table.

ICI Combustion Tool

Please enter the appropriate Document Header information in the fields to the right. This information will be used to populate the EIS Staging Tables.

Author Name*

Jane Smith

Organization Name*

DNR

Document Title*

EIS

Keywords

Comment

Data Flow Name*

EIS_v1_0

Property-Submission Type*

Production

Data Category*

Nonpoint

NCD Data File

User Identifier*

jane.smith@dnr.gov

Program System Code*

DNR

Emissions Year*

2014

Model

ICI Combustion Tool

Model Version

1.2

Emissions Creation Date

8/12/2015

Submittal Comment

Previous: Edit Assumptions

Next: Run ICI Combustion Tool

** Indicates required field.*

Once the document header information has been entered, click this button to run the ICI Combustion Tool.

Element	Required for Schema Validation	Data Type in EIS	Definition
Author Name	Yes	Character (20)	Your name, not your user ID
Organization Name	Yes	Character (20)	The name of the organization which you are representing
Document Title	Yes	Character (3)	Must always be "EIS"
Keywords	No	Character (100)	Words that best describe the payload. Multiple keywords should be separated by commas. This is for transaction categorization and searching.
Comment	No	Character (400)	Additional comments for processors
Data Flow Name	Yes	Character (20)	Must always be "EIS_v1_0"
Property-Submission Type	Yes	Character (20)	Either "QA" or "Production"
Property-Data Category	Yes	Character (20)	Either "FacilityInventory", "Point", "Nonpoint", "Onroad", "Nonroad", or "Event"
NCD Data File	(Yes)	Character (20)	The name of the NCD zipped file which is being attached. Only required when reporting onroad/nonroad activity input data.
User Identifier	Yes	Character (255)	User ID recognized by EIS. Usually your email address
Program System Code	Yes	Character (20)	The code that represents the information management system which has responsibility for the data in a linked or interrelated information management system.
Emissions Year	Yes	Year	The year of the submitted emissions.
Model	No	Character (80)	The name of the model or the conversion tool used for generating the emissions data.
Model Version	No	Character (20)	The version of the model or conversion tool.
Emissions Creation Date	No	Date YYYY-MM-DD	Date that the data being submitted were created, or the date when the model generating the data was run.
Submittal Comment	No	Character (400)	Any comments regarding the file submission.

2.8 Run the ICI Tool

Click **“Run ICI Combustion Tool”** to run the tool.



You will see this window while the tool is running.

The ICI Combustion Tool is running. This process may take several minutes. This window will close and the completed emissions inventory will open when the process is complete.

The results will also be output in EIS Staging Table format to a separate database file called:
"ICI Tool Output - EIS Format.mdb."



3. Outputs

The output of the ICI Combustion Tool is the calculated inventory for the selected state(s). When the tool finishes running, the calculated inventory will open in the tool.

The calculated inventory is also automatically exported to a separate database file called “ICI Tool Output - EIS Format.mdb”. This database file, which contains the populated EIS Staging Tables, will be located in the same folder as the ICI Combustion Tool.

[illegible]