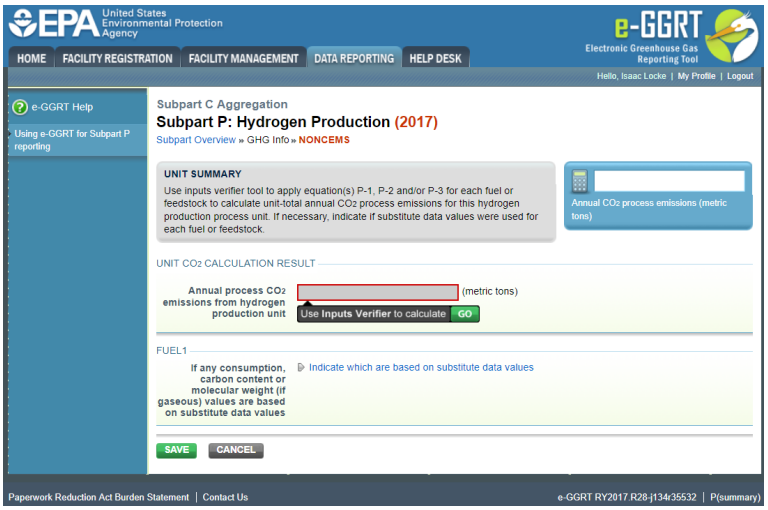
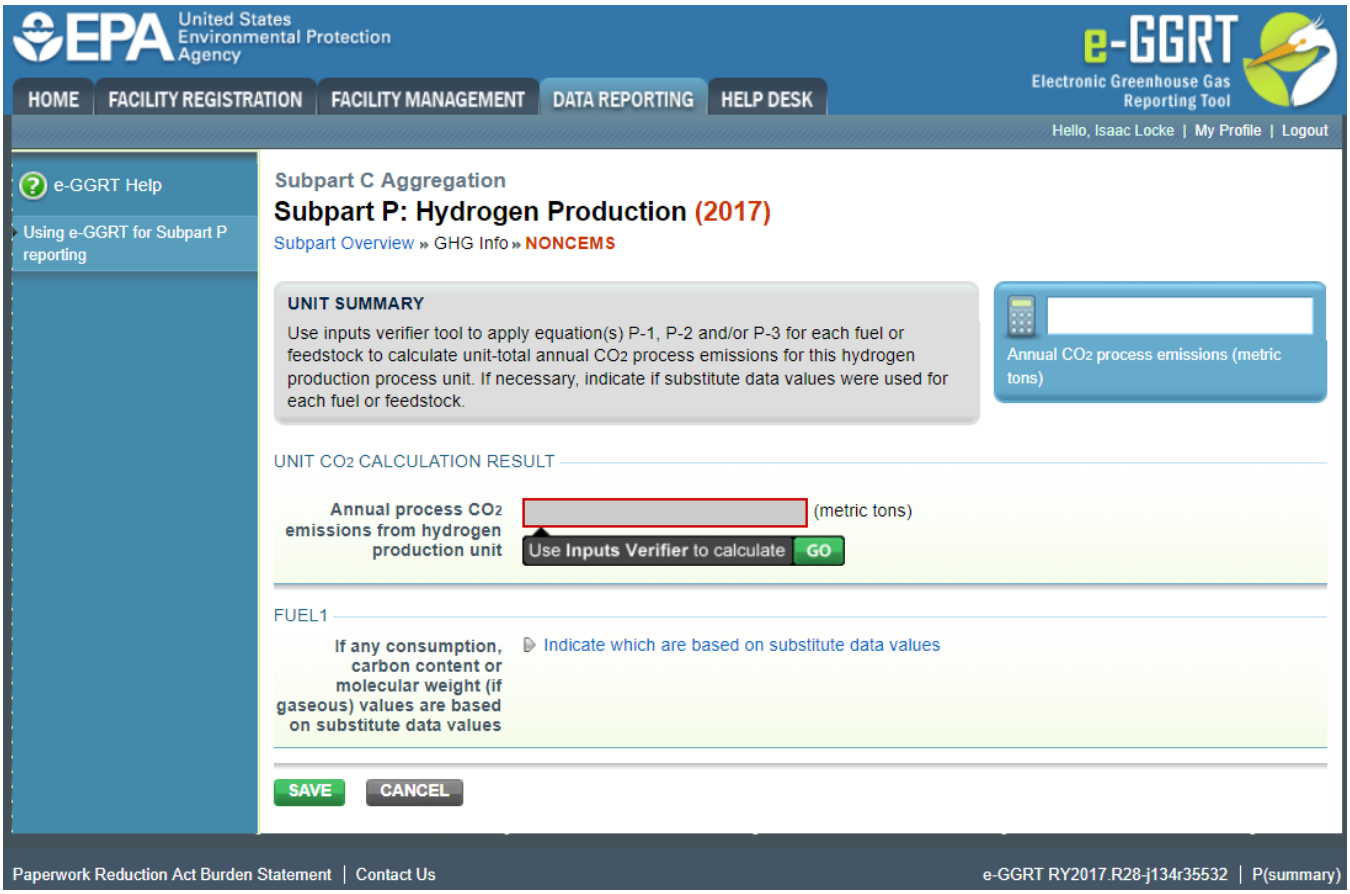
Subpart P Entering Equation Inputs Using IVT

Facilities access the IVT module from the Subpart P Summary Page. In the Unit CO_2 Calculation Result section, you will find a data entry cell labeled "Annual process CO_2 emissions from hydrogen production unit." Immediately below this data entry cell you will see a block labeled "Use Inputs Verifier to calculate" and a green "Go" box. Click "Go" to open the IVT module for Subpart P.

***>>** Click this link to expand*



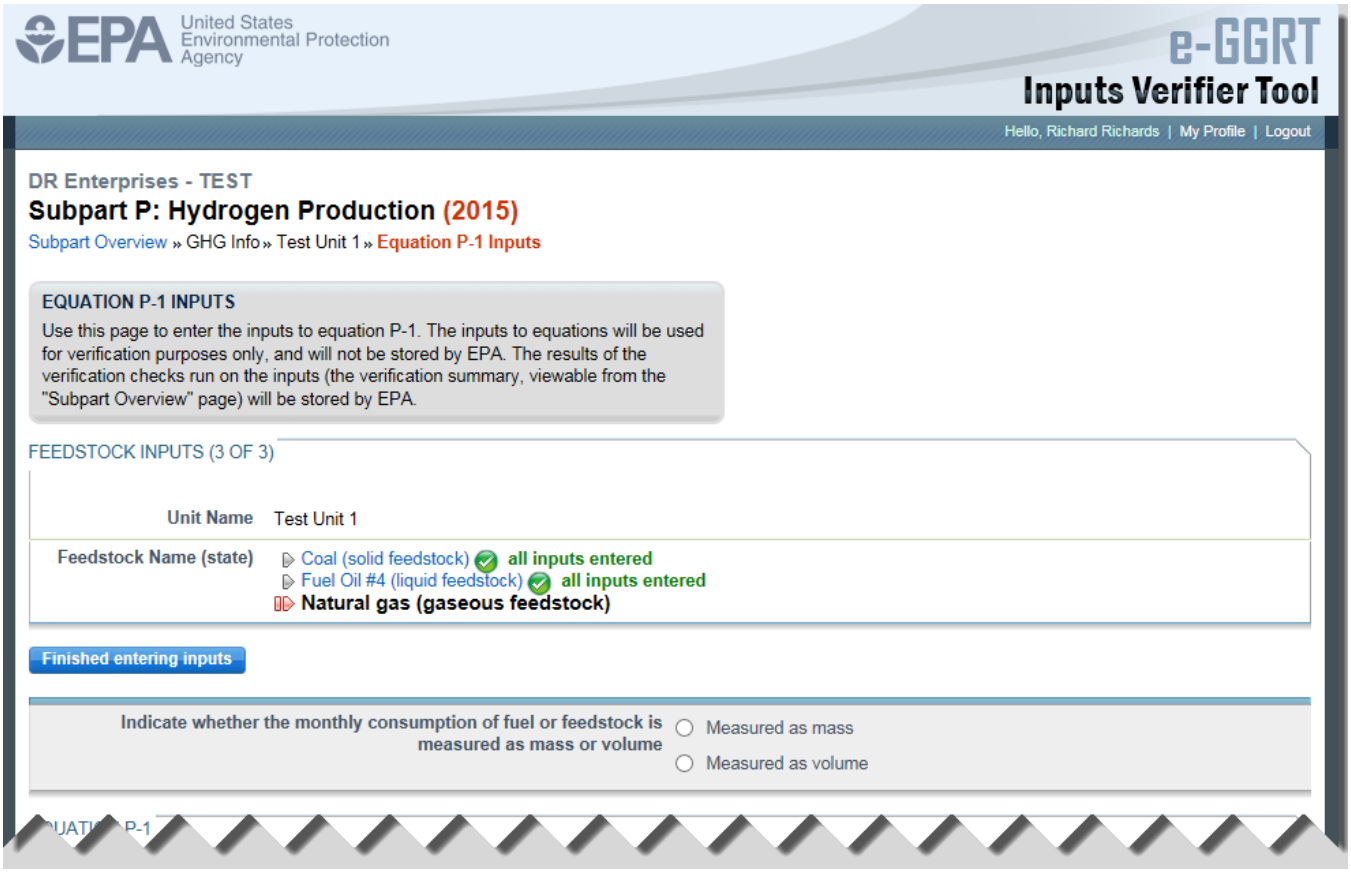


Entering Data Using IVT

If you have previously entered these inputs and saved your inputs file locally you should import your locally saved inputs file. (You will be prompted to load data from an existing inputs file when you open subpart P on the Facility Overview page.) If you are having trouble locating your inputs file or would like to "Reset" and recreate you inputs file, please review our help content reviewing these processes at Saving and Reloading a Inputs Verifier File or Resetting your Facility To Create a New Inputs Verifier file.

Once you enter the IVT module you will note that these screens are formatted with a grey background and an Inputs Verifier Tool header. Here you are asked to provide emissions inputs to allow the IVT to calculate emissions.

>> *Click this link to expand*



The feedstocks you entered for the unit on the Add/Edit a Unit page will be listed in the Feedstock Inputs section of the IVT page. Select the fuel for which you wish to enter data. For gaseous and liquid feedstocks, you will also need to indicate whether feedstock consumption is measured as mass or volume by selecting the relevant radio button in the box labeled “Indicate whether the monthly consumption of fuel or feedstock is measured as mass or volume.” This selection is not necessary for solid feedstocks since consumption quantities can only be entered as mass.

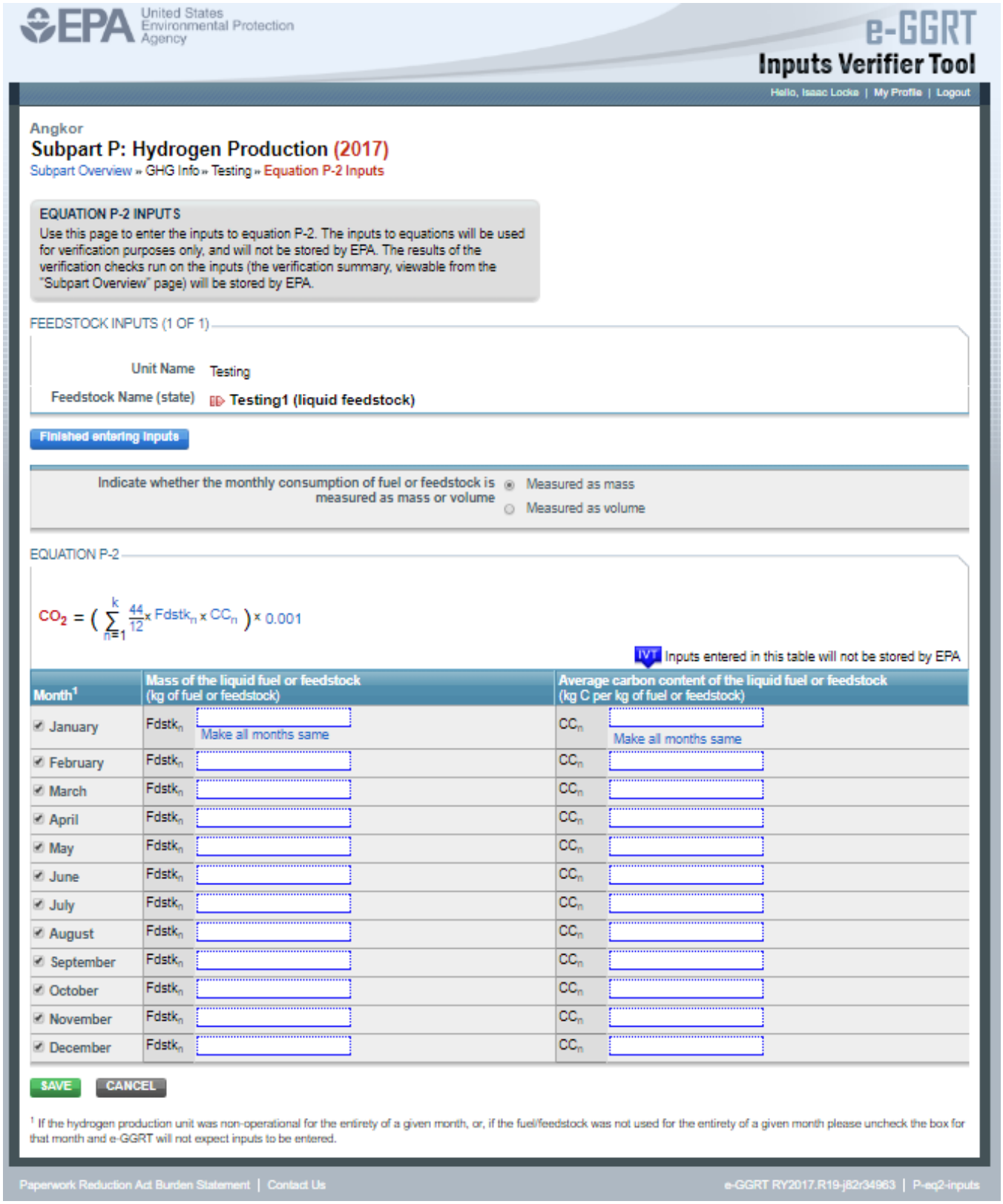
Once you have selected the feedstock and indicated the consumption units, you will use the page to provide inputs to Equations P-1, P-2 or P-3 depending on whether the selected feedstock is gaseous, liquid or solid. The equation inputs for the various types of feedstocks and consumption units are shown in the table below.

Feedstock Type (Equation)	Consumption Units Type	Equation Inputs (Units)

Gaseous (Eq. P-1)	Mass	• Mass of the gaseous fuel or feedstock (kg of fuel or feedstock) • Average carbon content of the gaseous fuel or feedstock (kg C per kg of fuel or feedstock)
	Volume	• Volume of the gaseous fuel or feedstock (scf (at standard conditions of 68°F and atmospheric pressure)) • Average carbon content of the gaseous fuel or feedstock (kg C per kg of fuel or feedstock) • Average molecular weight of the gaseous fuel or feedstock (kg/kg-mole)
Liquid (Eq. P-2)	Mass	• Mass of the liquid fuel or feedstock (kg of fuel or feedstock) • Average carbon content of the liquid fuel or feedstock (kg C per kg of fuel or feedstock)
	Volume	• Volume of the liquid fuel or feedstock (gallons of fuel or feedstock) • Average carbon content of the liquid fuel or feedstock (kg C per gallon of fuel or feedstock)
Solid (Eq. P-3)	Mass	• Mass of the solid fuel or feedstock (kg of fuel or feedstock) • Average carbon content of the solid fuel or feedstock (kg C per kg of fuel or feedstock)

The IVT page of Equation P-2 for liquid fuels or feedstocks with consumption measured as mass is shown below.

>> *Click this link to expand*



EPA United States Environmental Protection Agency

e-GGRT Inputs Verifier Tool

Hello, Isaac Locke | My Profile | Logout

Angkor

Subpart P: Hydrogen Production (2017)

Subpart Overview » GHG Info » Testing » Equation P-2 Inputs

EQUATION P-2 INPUTS

Use this page to enter the inputs to equation P-2. The inputs to equations will be used for verification purposes only, and will not be stored by EPA. The results of the verification checks run on the inputs (the verification summary, viewable from the "Subpart Overview" page) will be stored by EPA.

FEEDSTOCK INPUTS (1 OF 1)

Unit Name: Testing

Feedstock Name (state): Testing1 (liquid feedstock)

Finished entering inputs

Indicate whether the monthly consumption of fuel or feedstock is measured as mass or volume: (•) Measured as mass ( ) Measured as volume

EQUATION P-2

$$CO_2 = \left(\sum_{n=1}^{k} \frac{44}{12} \times Fdstk_n \times CC_n \right) \times 0.001$$

IVT Inputs entered in this table will not be stored by EPA

Month[1]	Mass of the liquid fuel or feedstock (kg of fuel or feedstock)		Average carbon content of the liquid fuel or feedstock (kg C per kg of fuel or feedstock)	
January	$Fdstk_n$	Make all months same	CC_n	Make all months same
February	$Fdstk_n$		CC_n	
March	$Fdstk_n$		CC_n	
April	$Fdstk_n$		CC_n	
May	$Fdstk_n$		CC_n	
June	$Fdstk_n$		CC_n	
July	$Fdstk_n$		CC_n	
August	$Fdstk_n$		CC_n	
September	$Fdstk_n$		CC_n	
October	$Fdstk_n$		CC_n	
November	$Fdstk_n$		CC_n	
December	$Fdstk_n$		CC_n	

SAVE CANCEL

[1] If the hydrogen production unit was non-operational for the entirety of a given month, or, if the fuel/feedstock was not used for the entirety of a given month please uncheck the box for that month and e-GGRT will not expect inputs to be entered.

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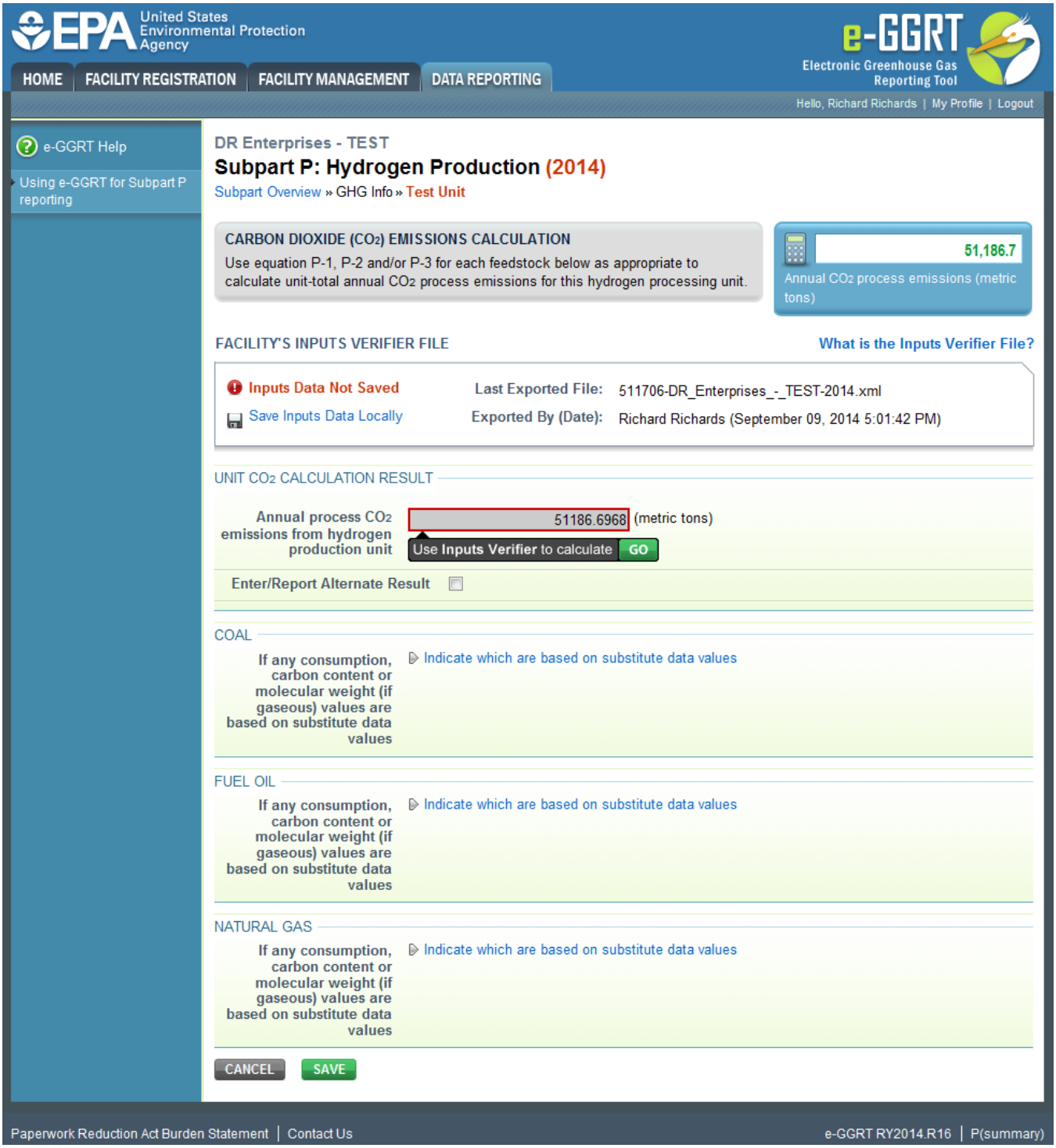
e-GGRT RY2017.R19-j82r34963 | P-eq2-inputs

If the equation inputs do not vary by month you may click "Make all months same" to copy these values to all months of the year. You will need to populate a screen like this for each fuel or feedstock used by the unit. Select "Next" to move to the next fuel or feedstock.

Once you have completed all of your inputs, select “Save” at the bottom of the page and e-GGRT will calculate your Subpart P (non-CEMs) emissions. Then, select “Unit Summary” above the inputs entry section to return to the Greenhouse Gases Emissions page for the unit to view the result in the cell labeled “Annual process CO_2 emissions from hydrogen production unit” in the Unit CO_2 Calculation Result panel. Check the “Enter/Report Alternate Result” box if you wish to report a result that differs from the one calculated by the IVT (note that this will generate a validation message).

>> *Click this link to expand*



Saving and Reloading Your Inputs Verifier File

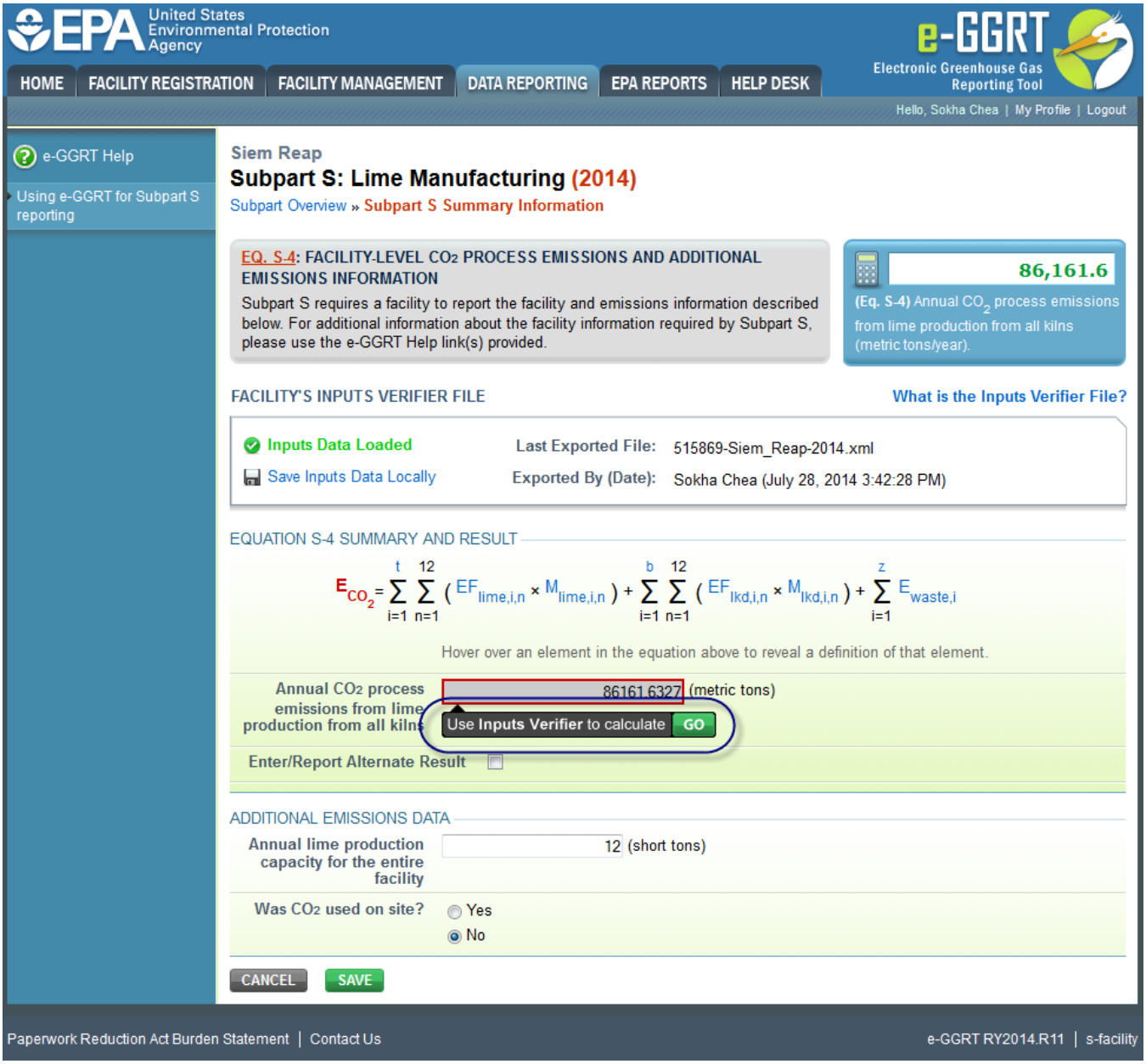
As you enter data into the Inputs Verifier Tool (IVT), the system creates and "inputs file" that contains all the data that you entered into IVT. You must save your inputs file to your computer or other location that you designate. On each subsequent log in, you will be prompted to temporarily upload the latest version of the inputs file to e-GGRT. **e-GGRT will not save data entered into the IVT. Users are responsible for saving their facility's inputs file.** This page shows how the IVT assists users with this task.

The following example demonstrates how the inputs to equations are 1) entered, 2) saved locally, 3) temporarily loaded at a later session, 4) the screen errors you may receive, and 5) error messages you may receive if you attempt to open an inputs file that is not the most recent one saved for your facility.

If you are having trouble locating your inputs file or would like to "Reset" and recreate your inputs file, please review our help content reviewing these processes at Reloading Your Inputs Verifier File or Resetting your Facility To Create a New Inputs Verifier file.

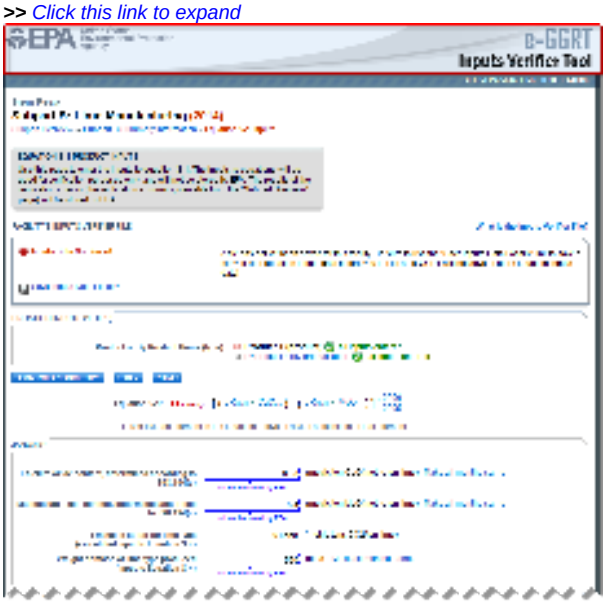
To access the inputs verifier tool, users would log in to e-GGRT with their username and password, select their facility, and navigate to the "Data Reporting" section of e-GGRT.

>> *Click this link to expand*



On the Data Reporting tab for the selected subpart, immediately below a reported emissions value, the user will find a button labeled **"Use Inputs Verifier to calculate| GO"**. Clicking **GO** will open the inputs verifier tool for that reported emissions value. Please note that screens in the inputs verifier tool are clearly marked with a unique header indicating that you are using the IVT (shown below with red outline).

>> *Click this link to expand*



Siem Reap

Subpart S: Lime Manufacturing (2014)

EQUATION S-1 PRODUCT INPUTS

Use this page to enter the inputs to equation S-1. The inputs to equations will be used for verification purposes only, and will not be stored by EPA. The results of the verification checks (the verification summary, viewable from the "Subpart Overview" page) will be stored by EPA.

FACILITY'S INPUTS VERIFIER FILE What is the Inputs Verifier File?

Inputs Data Not Saved

A file has not yet been saved for this facility. Be sure to use the "Save Inputs Data Locally" link to save a copy of your equation inputs data before you log off as e-GGRT will not save or store equation inputs data!

Save Inputs Data Locally

EQUATION INPUTS (1 OF 2)

Product or By-Product Name (type) Product 1 (product) all inputs entered
By Product A (by-product sold) all inputs entered

Equation S-4 Summary ←PREV NEXT→

Equation S-1: $EF_{LIME,i,n} = [(SR_{CaO} \times CaO_{i,n}) + (SR_{MgO} \times MgO_{i,n})] * \frac{2000}{2205}$

Hover over an element in the equation above to reveal a definition of that element.

JANUARY

Calcium oxide content, determined according to §98.194(c)	0.66 (will not be stored by EPA)	(metric ton CaO/metric ton lime) Make all months same
Magnesium oxide content, determined according to §98.194(c)	0.4 (will not be stored by EPA)	(metric ton MgO/metric ton lime) Make all months same
Emission factor for lime type (calculated input to Equation S-4)	0.8659	(metric tons CO2/ton lime)
Weight or mass of lime type produced (input to Equation S-4)	520 (will not be stored by EPA)	(tons) Make all months same

DECEMBER

Calcium oxide content, determined according to §98.194(c)	0.66 (will not be stored by EPA)	(metric ton CaO/metric ton lime)
Magnesium oxide content, determined according to §98.194(c)	0.4 (will not be stored by EPA)	(metric ton MgO/metric ton lime)
Emission factor for lime type (calculated input to Equation S-4)	0.8659	(metric tons CO2/ton lime)
Weight or mass of lime type produced (input to Equation S-4)	520 (will not be stored by EPA)	(tons)

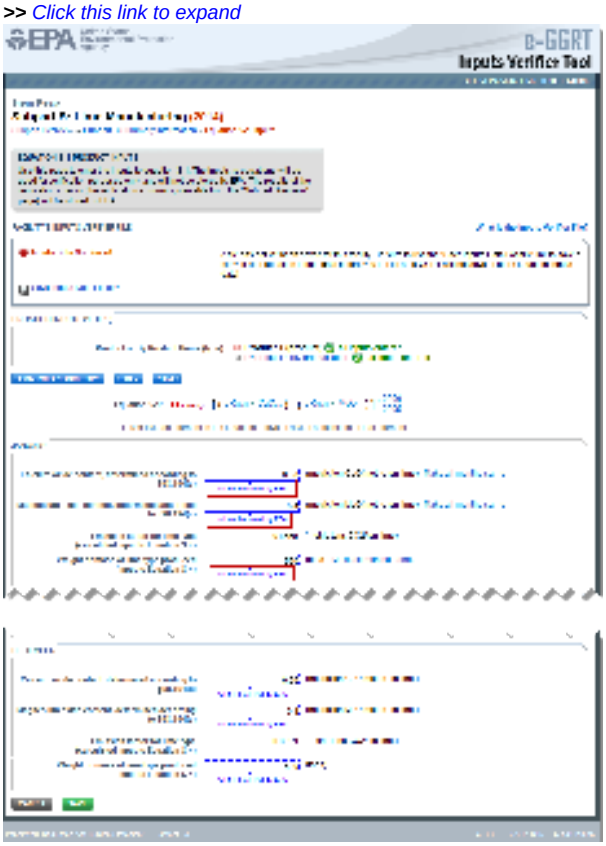
CANCEL SAVE

Entering Data Using the IVT

Once in the IVT, the user will be able to enter inputs to equations data. An example of an inputs to equations field is outlined with red in the screen shot below. Please note that every field for inputs to equations states that the data "will not be stored by EPA". Unless you save you input files, you will need to manually re-enter this data during future data entry sessions.

> The screenshot below is from Subpart S and is displayed as an example. The screen for other subparts may differ slightly.

>> *Click this link to expand*



Siem Reap

Subpart S: Lime Manufacturing (2014)

EQUATION S-1 PRODUCT INPUTS

Use this page to enter the inputs to equation S-1. The inputs to equations will be used for verification purposes only, and will not be stored by EPA. The results of the verification checks (the verification summary, viewable from the "Subpart Overview" page) will be stored by EPA.

FACILITY'S INPUTS VERIFIER FILE What is the Inputs Verifier File?

Inputs Data Not Saved

A file has not yet been saved for this facility. Be sure to use the "Save Inputs Data Locally" link to save a copy of your equation inputs data before you log off as e-GGRT will not save or store equation inputs data!

Save Inputs Data Locally

EQUATION INPUTS (1 OF 2)

Product or By-Product Name (type) Product 1 (product) all inputs entered
By Product A (by-product sold) all inputs entered

Equation S-4 Summary ←PREV NEXT→

Equation S-1: $EF_{LIME,i,n} = [(SR_{CaO} \times CaO_{i,n}) + (SR_{MgO} \times MgO_{i,n})] * \frac{2000}{2205}$

Hover over an element in the equation above to reveal a definition of that element.

JANUARY

Calcium oxide content, determined according to §98.194(c)	0.66 (will not be stored by EPA)	(metric ton CaO/metric ton lime) Make all months same
Magnesium oxide content, determined according to §98.194(c)	0.4 (will not be stored by EPA)	(metric ton MgO/metric ton lime) Make all months same
Emission factor for lime type (calculated input to Equation S-4)	0.8659	(metric tons CO2/ton lime)
Weight or mass of lime type produced (input to Equation S-4)	520 (will not be stored by EPA)	(tons) Make all months same

DECEMBER

Calcium oxide content, determined according to §98.194(c)	0.66 (will not be stored by EPA)	(metric ton CaO/metric ton lime)
Magnesium oxide content, determined according to §98.194(c)	0.4 (will not be stored by EPA)	(metric ton MgO/metric ton lime)
Emission factor for lime type (calculated input to Equation S-4)	0.8659	(metric tons CO2/ton lime)
Weight or mass of lime type produced (input to Equation S-4)	520 (will not be stored by EPA)	(tons)

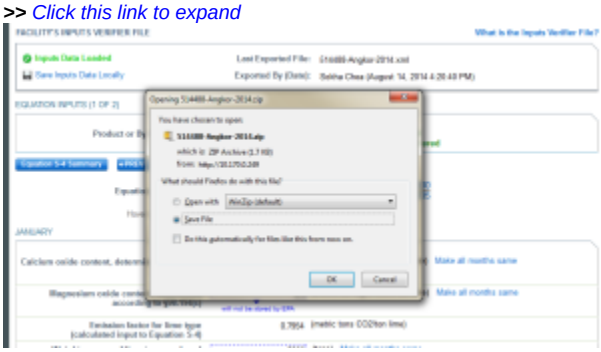
CANCEL SAVE

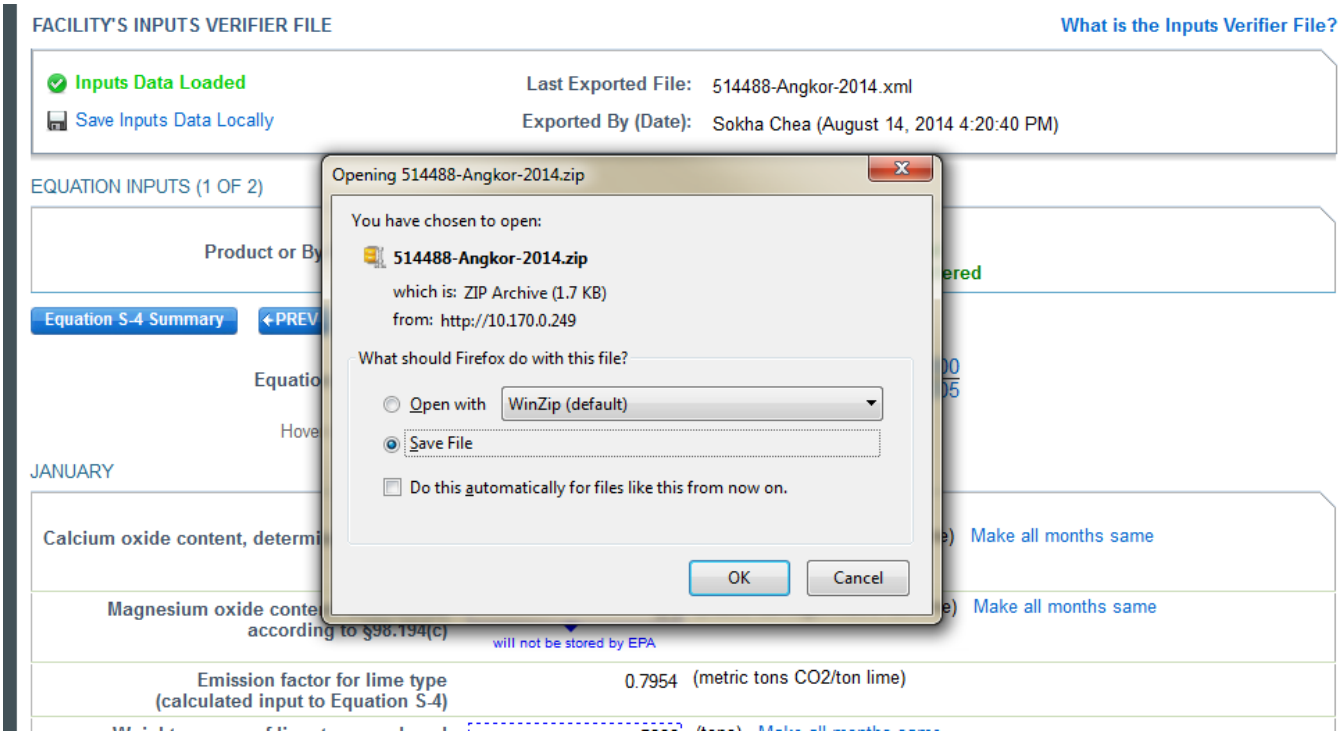
Saving Data Entered in the IVT

Data entered into the inputs verifier module are NOT saved in e-GGRT. Only the output values from the inputs verifier module are saved in e-GGRT. **Ther efore, each user/facility will have to save their inputs verifier file to their local hard drive and keep track of the file for future use.** On the top of each IVT screen, immediately below the grey box, IVT will present the save status of your FACILITY'S INPUTS VERIFIER FILE (File History), which contains the data entered into the inputs verifier module. To use e-GGRT in the future for your facility, you must save this file in a place where you can access it. This status box is also available on the Facility Overview page. Prior to saving your inputs verifier file, this section of the screen will state **"Inputs Data Not Saved"** in red letters and will provide the "Last Saved File" field. Click "Save Inputs Data" to save the inputs verifier file to your computer. This status box appears on many pages throughout e-GGRT and IVT so that it is easy for you to save inputs. However, you only need to save inputs at the completion of each data entry session.

After clicking "Save Inputs Data ", you will be able to save the inputs verifier file to your computer. Please note that different browsers may allow the user to set file-saving preferences and default locations. The example shown below uses the Firefox browser. Each user's save dialog box and defaults may appear differently, depending on the browser used. For information on browser-specific behaviors please refer to Browser-specific issues and behaviors.

>> *Click this link to expand*



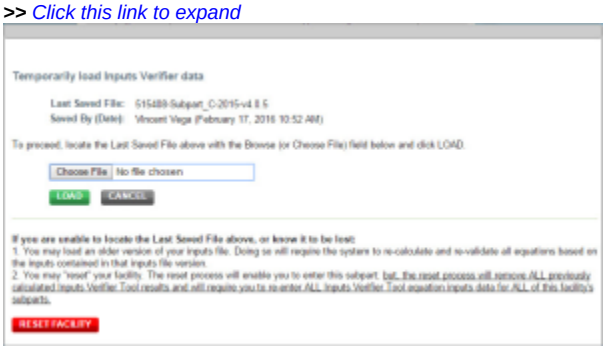


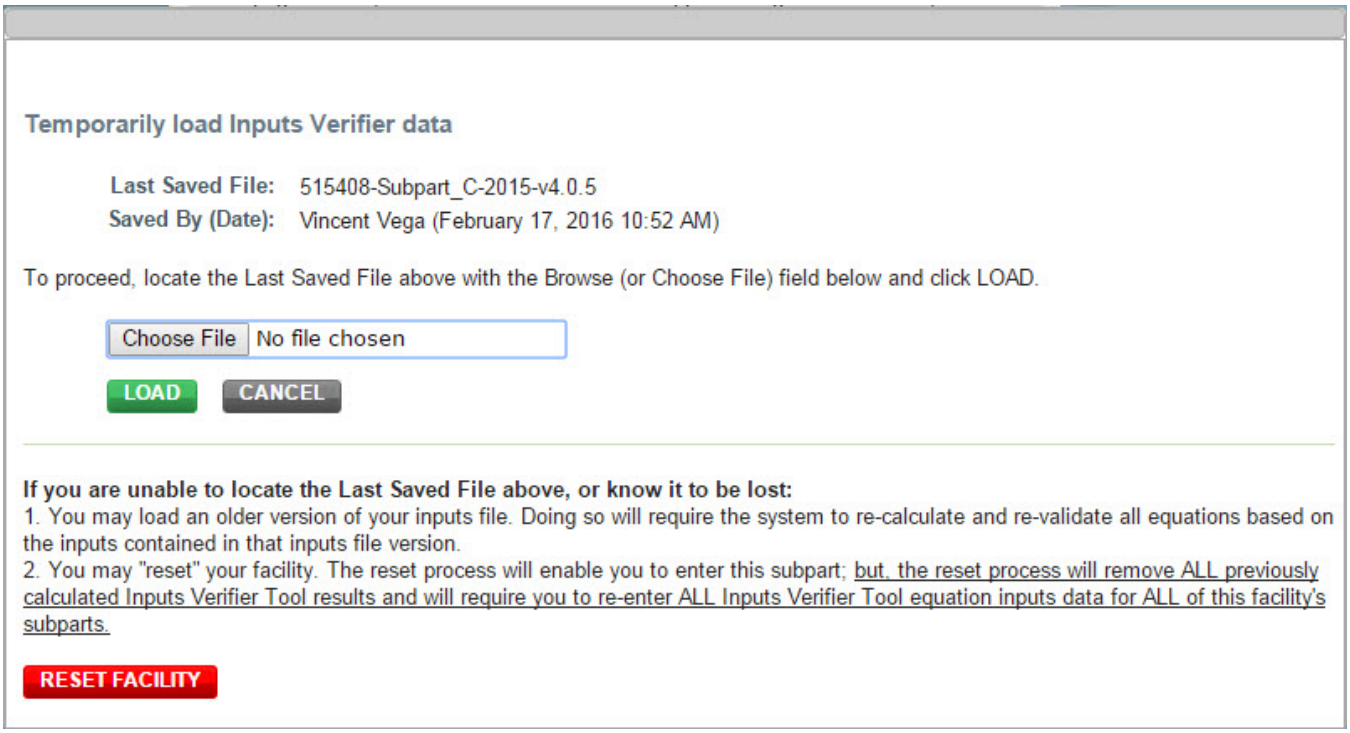
Once you have saved the file, the inputs verifier file status box will display "**Inputs Data Saved**" in green text and the "Saved By (Date):" field that shows the name of the user who most recently saved an inputs verifier file and the date and time." Each time you click "Save Inputs Data Locally", the IVT will record that you have saved your inputs verifier file. The IVT does not record where you save your inputs verifier file or whether you elect to cancel this action.

Reloading an Inputs Verifier File

When you come back to e-GGRT in a later session, you will return to the FACILITY or SUPPLIER OVERVIEW web form. Here you will see the box for the FACILITY'S INPUTS VERIFIER FILE (File History), with the message that "**Inputs Data Not Loaded**" in red text. To load an inputs verifier file that has been previously saved, click the link labeled "Temporarily Load Inputs Data". Then browse to and select the inputs verifier file saved locally (to your local computer or local network drive). The IVT will accept the ZIP file or XML file previously downloaded by the user or a copy of that file (note: this file may be renamed but its contents must be identical). Finally, click the **IMPORT** button to load the file to the inputs verifier tool.

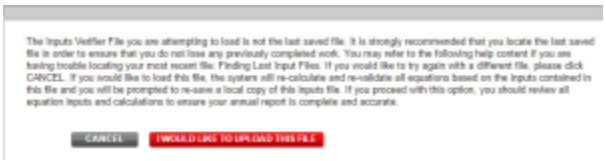
>> *Click this link to expand*





If the user attempts to reload an inputs verifier file that is not the one most recently saved for the facility, the user will receive the following warning message. The system prevents the user from accidentally loading an outdated file and thus losing the most recent data. Note that you may elect to choose "I Would Like to Upload this File" and the system will attempt to reconcile all validation messages and IVT calculations (which are based on the most recently-saved file) based on the inputs contained in the old file that you are electing to load. **If you elect to proceed to upload an old file, it is highly recommended that you review all equation inputs and calculations to ensure your annual report is complete and accurate.**

>> *Click this link to expand*



The Inputs Verifier File you are attempting to load is not the last saved file. It is strongly recommended that you locate the last saved file in order to ensure that you do not lose any previously completed work. You may refer to the following help content if you are having trouble locating your most recent file: Finding Lost Input Files. If you would like to try again with a different file, please click CANCEL. If you would like to load this file, the system will re-calculate and re-validate all equations based on the inputs contained in this file and you will be prompted to re-save a local copy of this inputs file. If you proceed with this option, you should review all equation inputs and calculations to ensure your annual report is complete and accurate.

CANCEL | I WOULD LIKE TO UPLOAD THIS FILE

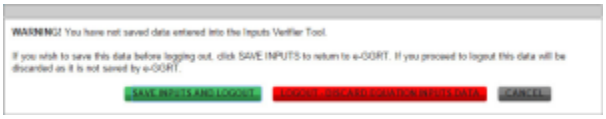
Screen Errors You May Receive

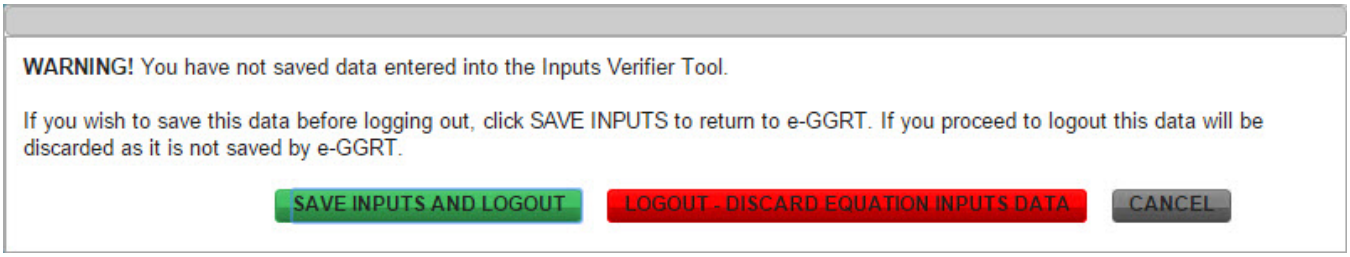
When attempting to save inputs data during the IVT data entry process, the user may receive screen errors that indicate the user has not completely entered required data to the Inputs Verifier Tool. Screen errors must be corrected before you will be permitted to complete a save action. Once you have corrected these errors, IVT will be able to calculate the equation result and you will be able to save your inputs verifier file locally.

>> *Click this link to expand*

If the user inputs and saves data in IVT, then adds, deletes, or updates one or more inputs to an equation in IVT without saving the inputs file locally and subsequently attempts to log out of e-GGRT, the following warning message will be displayed.

>> *Click this link to expand*



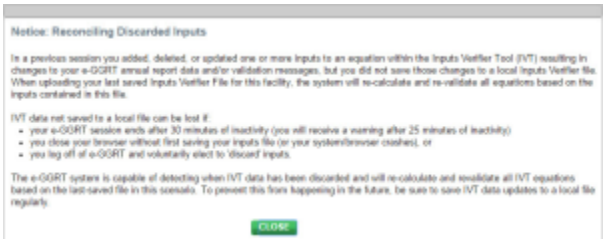


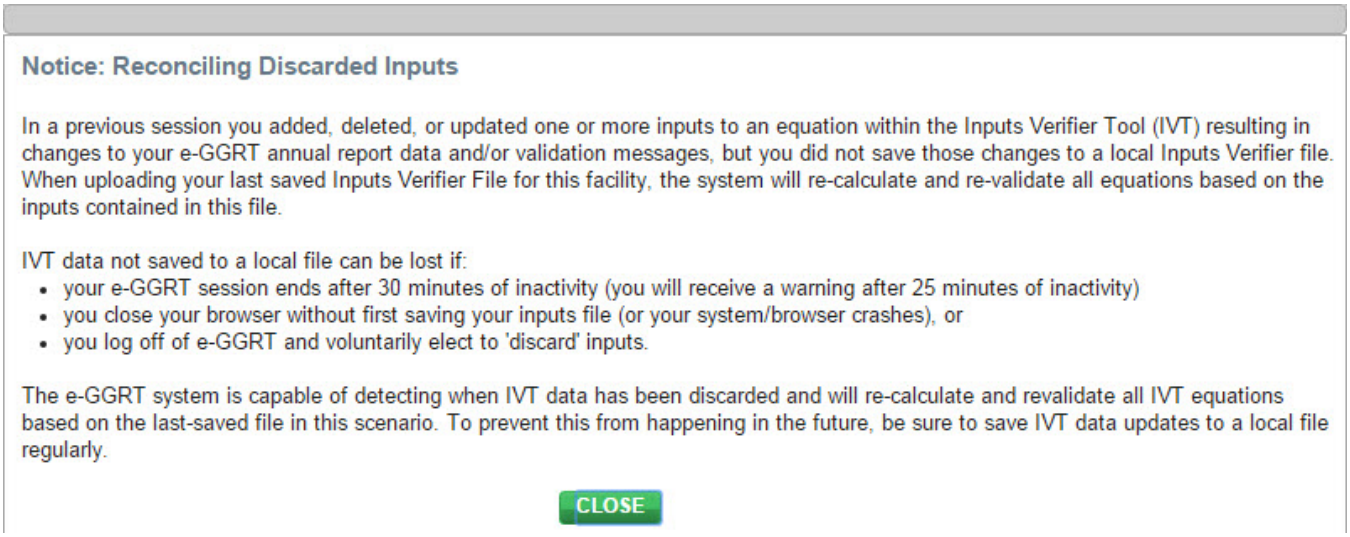
The user has three options:

- SAVE INPUTS AND LOGOUT - after clicking this button, the user is prompted to save the inputs file locally. Once the file has been saved, the user is logged out of e-GGRT.
- LOGOUT - DISCARD EQUATION INPUTS DATA - the most recent changes to the inputs data are discarded and the user is automatically logged out of e-GGRT. The inputs file is NOT saved.
- CANCEL - the user is returned to e-GGRT. The inputs file is NOT saved. Note that if the user clicks CANCEL and does not save the inputs file locally and later attempts to logout, the warning message will be displayed again).

If the user clicked the LOGOUT - DISCARD EQUATION INPUTS DATA button in a previous session, the following message will be displayed the next time the user logs in.

>> *Click this link to expand*





Notice: Reconciling Discarded Inputs

In a previous session you added, deleted, or updated one or more inputs to an equation within the Inputs Verifier Tool (IVT) resulting in changes to your e-GGRT annual report data and/or validation messages, but you did not save those changes to a local Inputs Verifier file. When uploading your last saved Inputs Verifier File for this facility, the system will re-calculate and re-validate all equations based on the inputs contained in this file.

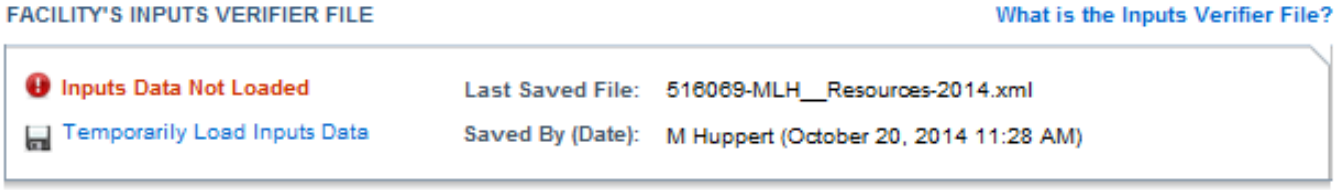
IVT data not saved to a local file can be lost if:

- your e-GGRT session ends after 30 minutes of inactivity (you will receive a warning after 25 minutes of inactivity)
- you close your browser without first saving your inputs file (or your system/browser crashes), or
- you log off of e-GGRT and voluntarily elect to 'discard' inputs.

The e-GGRT system is capable of detecting when IVT data has been discarded and will re-calculate and revalidate all IVT equations based on the last-saved file in this scenario. To prevent this from happening in the future, be sure to save IVT data updates to a local file regularly.

CLOSE

To load an inputs verifier file that has been previously saved (as would occur if you logged off and came back to e-GGRT in a later session), the user would click the link labeled "Temporarily Load Inputs Data". The user would browse to and select the inputs verifier file saved locally (to their local computer or local network drive). The IVT will accept the ZIP file or XML file previously downloaded by the user or a copy of that file (note: this file may be renamed but its contents must be identical) . The user would then click the **IMPORT** button to load the file to the inputs verifier tool.



If you attempt to reload an inputs verifier file that is not the one most recently saved for the facility, the user will receive the following warning message. The system prevents the user from accidentally loading an outdated file and thus losing the most recent data. Note that you may elect to choose "I Would Like to Upload this File" and the system will attempt to reconcile all validation messages and IVT calculations (which are based on the most recently-saved file) based on the inputs contained in the old file that you are electing to load. **If you elect to proceed to upload an old file, it is highly recommended that you review all equation inputs and calculations to ensure your annual report is complete and accurate.**

The Inputs Verifier File you are attempting to load is not the last saved file. It is strongly recommended that you locate the last saved file in order to ensure that you do not lose any previously completed work. You may refer to the following help content if you are having trouble locating your most recent file: Finding Lost Input Files. If you would like to try again with a different file, please click CANCEL. If you would like to load this file, the system will re-calculate and re-validate all equations based on the inputs contained in this file and you will be prompted to re-save a local copy of this inputs file. If you proceed with this option, you should review all equation inputs and calculations to ensure your annual report is complete and accurate.

CANCEL I WOULD LIKE TO UPLOAD THIS FILE