



# HELIX

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Home Energy Labeling Information eXchange



Massachusetts Department  
of Energy Resources



SUSTAINABLE REAL  
ESTATE  
CONSULTING  
SERVICES



HELIX 1.0

MARCH 2018

# HELIX Home Page

You can open the Navigation Drawer to see your homes and organizations count

You can also navigate through the tabs at the top

**Key Navigation Tabs:**

- DATA: all of the datasets you load, they are combined into
- INVENTORY: your list of properties
- CERTIFICATIONS: your list of reference certifications

**HELIX PLATFORM**

SubOrgA +

TEST USER

PROJECTS

INVENTORY

DATA

ORGANIZATIONS

CERTIFICATIONS

2

5

Projects Inventory Data Contact

**HELIX**

The Home Energy Labeling Information Exchange (HELIX) is a database which automatically populates real estate listings with home energy information from the U.S. Department of Energy's Home Energy Score and other sources. The database was developed by regional stakeholders as a free software tool to allow home buyers access to home energy information in the real estate purchasing process. Learn how to get started.

Upload your buildings list Getting Started Guide

**Highlights of HELIX Database**

**Manual Data Upload**

Get started using HELIX by uploading your properties and certifications list. Make sure these files are each in .csv, .xls, .xlsx, or .xml format. The HELIX Platform will help you map and validate your data in the process of loading.

Download Sample Data

You can download two sample files with illustrative formats

Home Energy Score database.

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Dictionary of Column Headers

# HELIX Workflow

Import data

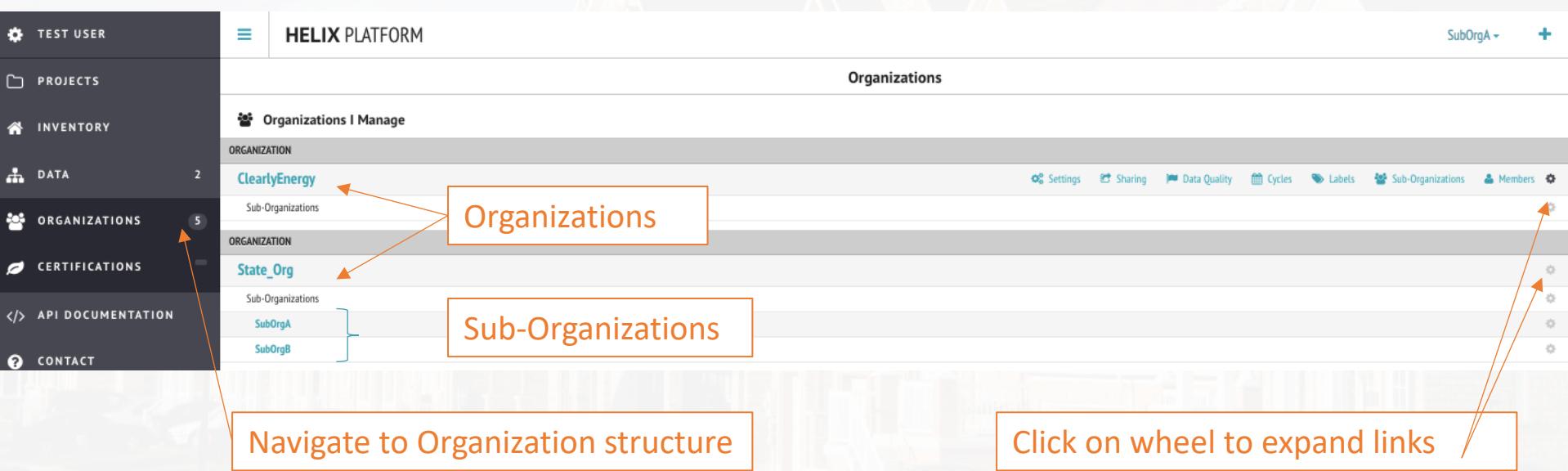
Map field headers to HELIX naming conventions

Merge data into existing building list

Export data as needed

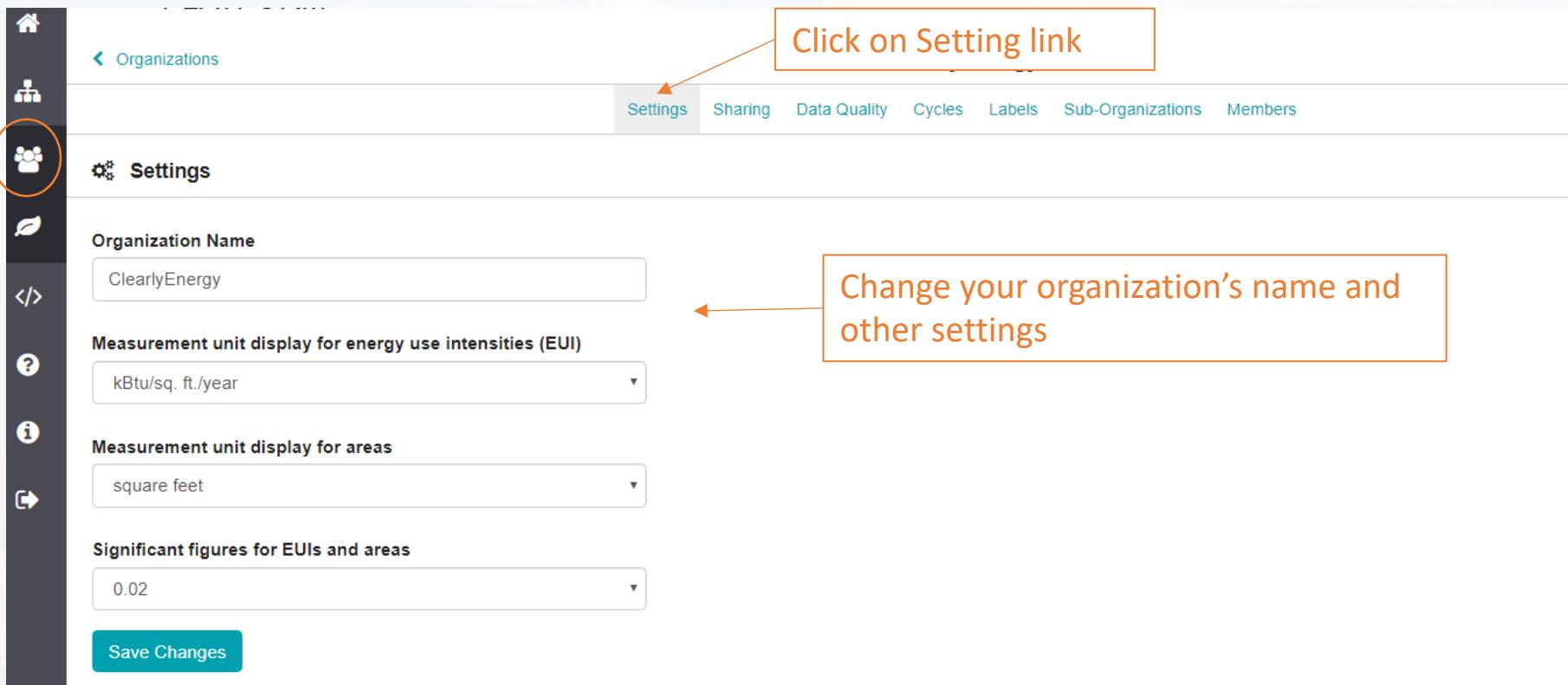
# Organizations

- Every account holder belongs to one or more Organizations, though most users will only belong to one
- HELIX allows Organizations to have Sub-Organizations



The screenshot shows the HELIX Platform interface. On the left is a dark sidebar with navigation links: TEST USER, PROJECTS, INVENTORY, DATA (with a count of 2), ORGANIZATIONS (with a count of 5), CERTIFICATIONS, API DOCUMENTATION, and CONTACT. The ORGANIZATIONS link is highlighted with an orange arrow pointing to it from the bottom-left. The main area is titled "HELIx PLATFORM" and "Organizations". It shows a tree structure under "ClearlyEnergy": "State\_Org" has two sub-organizations, "SubOrgA" and "SubOrgB". A large orange box highlights the "Organizations" section, and another orange box highlights the "Sub-Organizations" section. A third orange box at the bottom left says "Navigate to Organization structure". A fourth orange box at the bottom right says "Click on wheel to expand links". The top right corner shows a dropdown for "SubOrgA" and a "+" button.

# Organizations - Settings



Click on Setting link

Change your organization's name and other settings

Settings Sharing Data Quality Cycles Labels Sub-Organizations Members

Organization Name

Measurement unit display for energy use intensities (EUI)

Measurement unit display for areas

Significant figures for EUIs and areas

Save Changes

# Organizations – Sub-Organizations

HELIK PLATFORM SubOrgA +

Organizations

Organizations I Manage

ORGANIZATION

ClearlyEnergy	
Sub-Organizations	

ORGANIZATION

State_Org	
Sub-Organizations	
SubOrgA	
SubOrgB	

**Parent Organization**

**Create a New Sub-Organization**

Sub-Org Name:

Invite an Owner:

Note 1: Sub-organizations cannot be deleted.  
 Note 2: Parent organization members are not automatically made members of sub-organizations.

The owner of the new sub-organizations must initially be a member of the parent organizations (can be deleted from the parent later)

**Create New Sub-Organization**

+ Create new sub-organization

Organizations owners can click to create new sub-organizations

Cancel

# Organizations - Sharing

HELIX PLATFORM SubOrgA +

◀ Organizations

Settings Sharing Data Quality Cycles Labels Sub-Organizations Members

1. Click on Sharing link



## Sharing Your Data

Save Changes

### Selecting Fields to Share

As the admin of your SEED instance you can control what data is shared throughout your organization and between your sub-organizations as well as what data is shared externally with the public-at-large. The subset of data you choose to share with the public can be different than the subset shared between your sub-organizations.

From the list below, select the fields that you want to: 1) share internally within your organization, and 2) share publicly with users outside your organization.

SHARE DATA WITH		
INTERNAL	PUBLIC	FIELD NAME
<input type="checkbox"/>	<input type="checkbox"/>	Search field name
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Address Line 1
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Address Line 2
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Building Certification
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Building Count

The owner of a parent organization can select fields to view between Sub-Organizations

The owner of a parent organization can set the query threshold for viewing records between Sub-Organizations

### Set a Query Threshold

Enter the minimum threshold count of buildings that can be returned in a shared query. The building count threshold is important without revealing information about individual buildings.

Count #

analysis on your data

Save Changes

# Organizations - Members

HELIx PLATFORM

SubOrgA +

1. Click on the Members link

2. Invite new members by clicking on this link

3. You can set the role of a new member

4. Invitations to HELIX and to set a password are sent via email

Invite a new member

MEMBER NAME	MEMBER EMAIL	LAST LOGIN	MEMBER ROLE	CERTIFICATIONS ADDED	CERTIFICATIONS EXPORTED
member name	member email	member last login	member role	member certifications	member certifications exports
Test User	[REDACTED]	2018-01-13 10:41 PM	owner	1	0
MLS Viewer					

Invite a New Member

First Name:

Last Name:

Email Address:

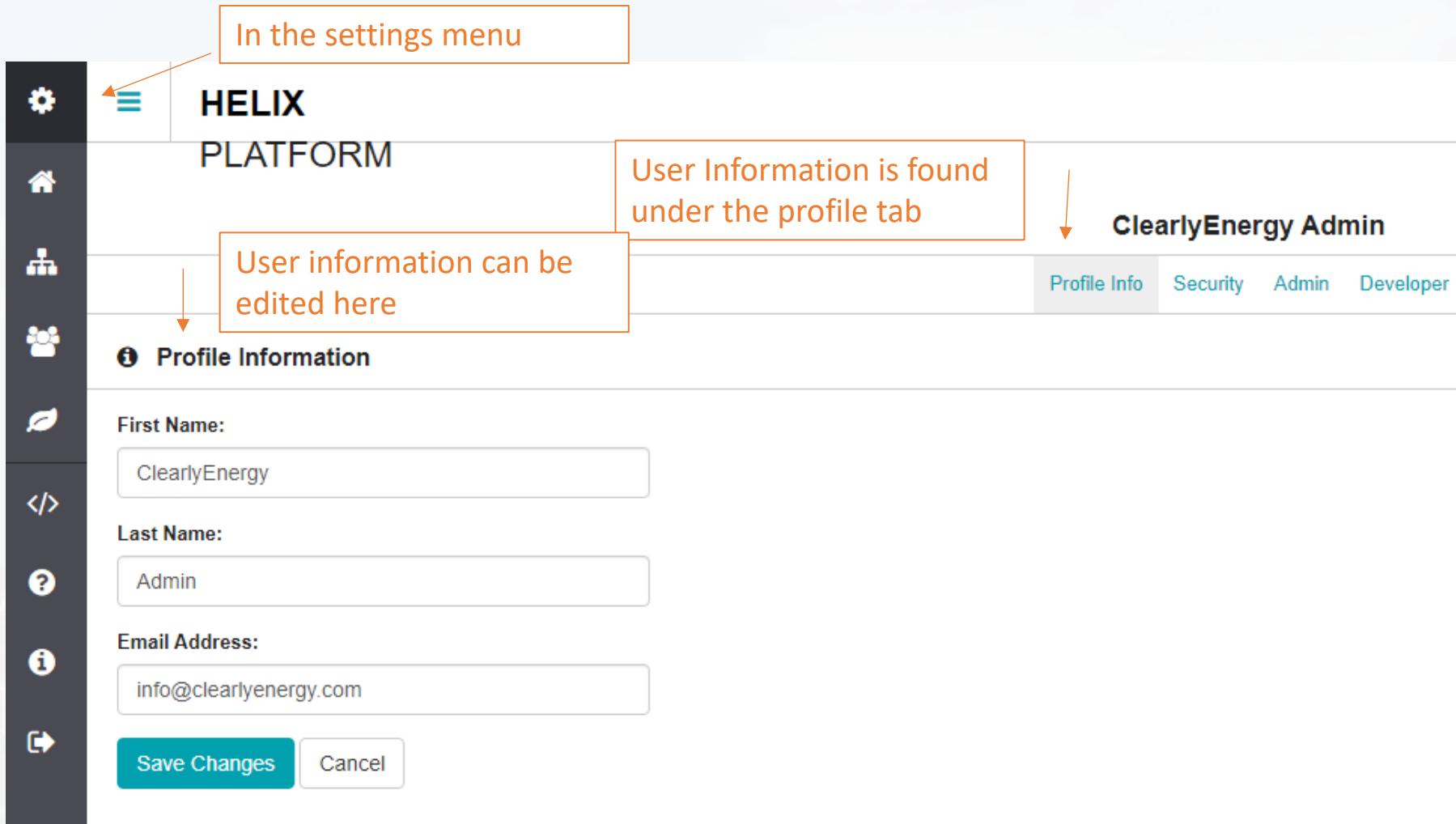
Role:  Member

Cancel Send Invite

# Organizations – Roles and Privileges

	Parent	Sub-Organization		
		Owner	Member	Viewer
<b>Set fields to display between Sub-Org</b>	✓			
<b>Create Sub Orgs</b>	✓			
<b>Add/remove members</b>	✓ to parent, or at setup of sub	✓		
<b>Add/remove certifications</b>	✓	✓		
<b>View members</b>	✓ in parent, owner(s) of subs	✓		
<b>Change settings:</b> • Rename Sub-org • Change member role	✓ in parent	✓		
<b>Add Data</b>	✓	✓	✓	
<b>Edit Data</b>	✓ all subs	✓	✓	
<b>View Data</b>	✓ all subs	✓	✓	✓

# User Profile Settings



In the settings menu

User information can be edited here

User Information is found under the profile tab

ClearlyEnergy Admin

Profile Info Security Admin Developer

Profile Information

First Name: ClearlyEnergy

Last Name: Admin

Email Address: info@clearlyenergy.com

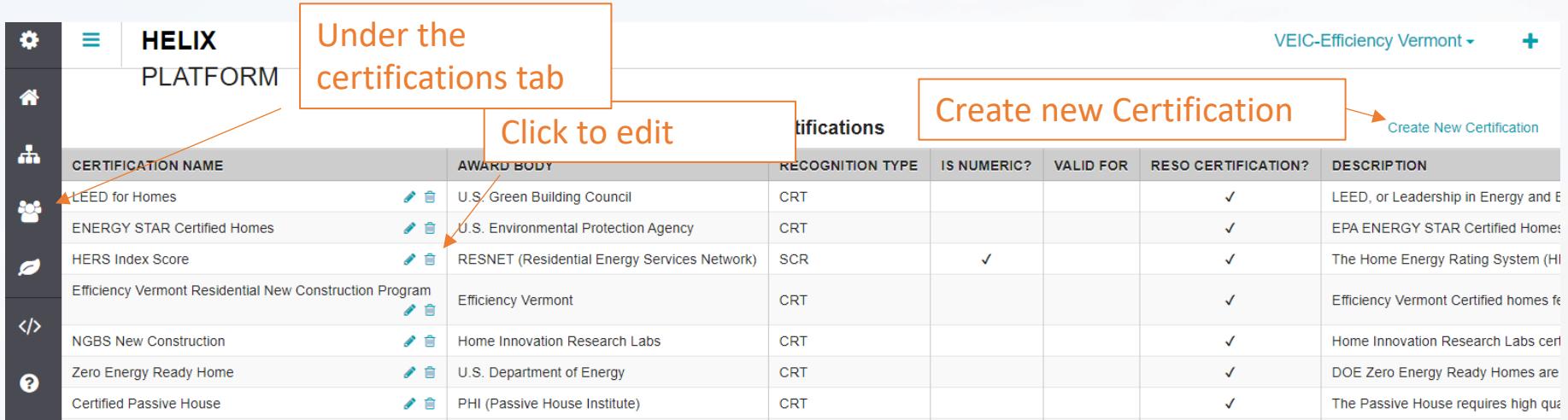
Save Changes Cancel

# Certifications

Under the certifications tab

Click to edit

Create new Certification



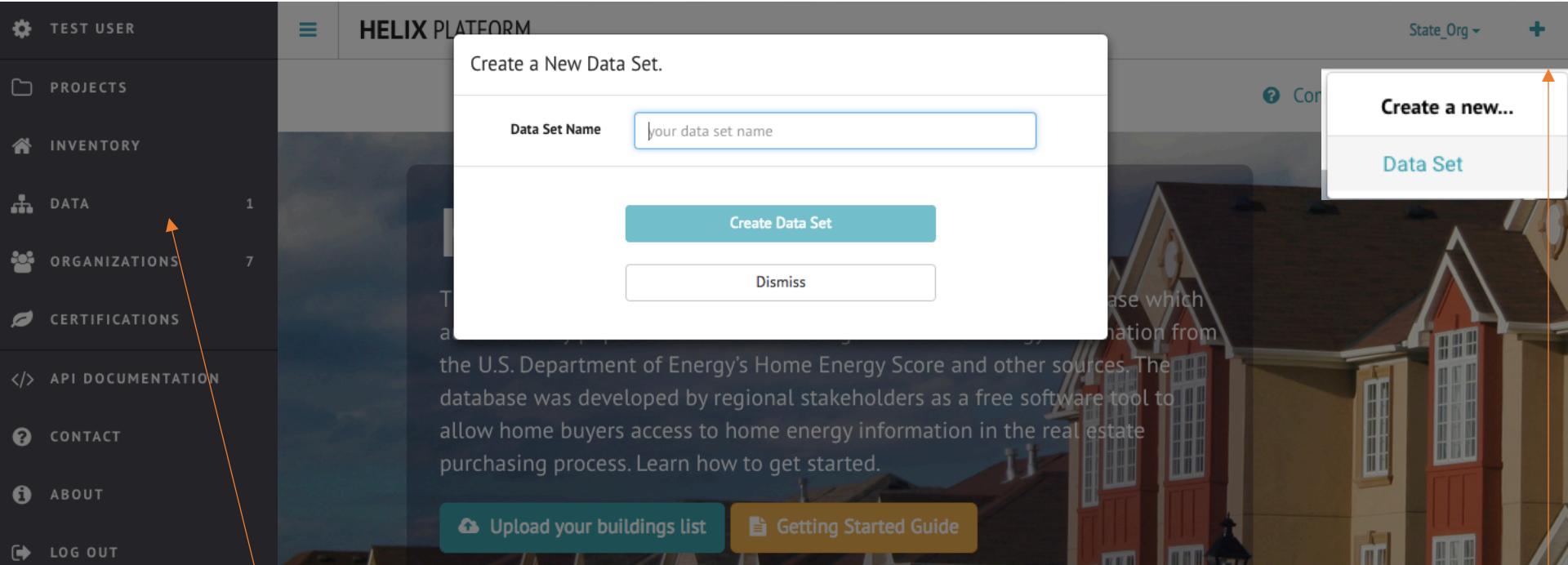
CERTIFICATION NAME	AWARD BODY	RECOGNITION TYPE	IS NUMERIC?	VALID FOR	RESO CERTIFICATION?	DESCRIPTION
LEED for Homes	U.S. Green Building Council	CRT			✓	LEED, or Leadership in Energy and E
ENERGY STAR Certified Homes	U.S. Environmental Protection Agency	CRT			✓	EPA ENERGY STAR Certified Homes
HERS Index Score	RESNET (Residential Energy Services Network)	SCR	✓		✓	The Home Energy Rating System (H)
Efficiency Vermont Residential New Construction Program	Efficiency Vermont	CRT			✓	Efficiency Vermont Certified homes fe
NGBS New Construction	Home Innovation Research Labs	CRT			✓	Home Innovation Research Labs cert
Zero Energy Ready Home	U.S. Department of Energy	CRT			✓	DOE Zero Energy Ready Homes are
Certified Passive House	PHI (Passive House Institute)	CRT			✓	The Passive House requires high qua

Create a New Certification

Certification Name	<input type="text" value="certification name"/>
Award Body	<input type="text" value="award body"/>
Recognition Type	<input type="radio"/> Numeric <input type="radio"/> Score <input type="radio"/> Certification <input type="radio"/> Award <input type="radio"/> Label <input type="radio"/> Participant <input type="radio"/> Rating <input type="radio"/> Zero Energy Ready home
Description	<input type="text" value="Enter duration in days"/> <input checked="" type="checkbox"/>
Valid For	<input type="text"/>
Export to MLS?	<input checked="" type="checkbox"/>
<input type="button" value="Cancel"/> <input type="button" value="Create Certification"/>	

- Certifications which are scores or ratings are assumed to be numeric. Make sure the Numeric option is checked for these
- Award, labels and other certifications can be True/False or a word descriptor
- If a score is only valid for a finite period of time, please enter this period in days
- Enable “Export to MLS” unless the data should not be exported

# Data Upload – Create Dataset

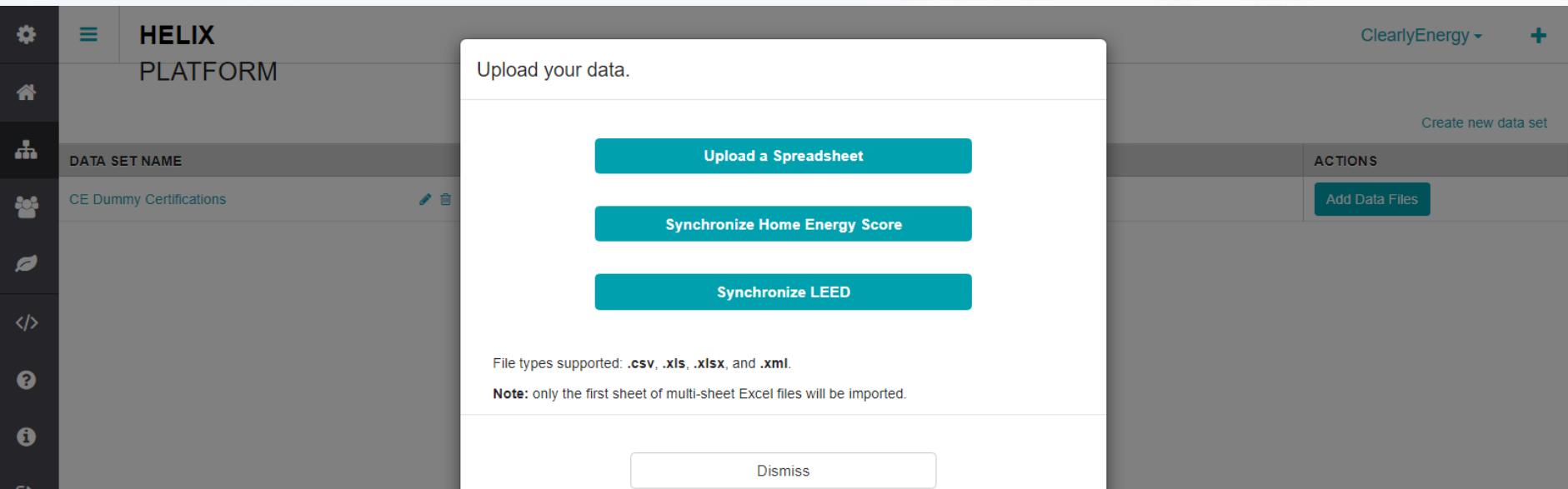


The screenshot shows the HELIX Platform interface. On the left, there is a navigation menu with items: TEST USER, PROJECTS, INVENTORY, DATA, ORGANIZATIONS (highlighted with an orange arrow), CERTIFICATIONS, API DOCUMENTATION, CONTACT, ABOUT, and LOG OUT. In the center, a modal window titled "Create a New Data Set." is open. It has a text input field labeled "Data Set Name" containing "your data set name". Below it are two buttons: "Create Data Set" (in blue) and "Dismiss" (in white). At the bottom of the page, there are two buttons: "Upload your buildings list" (blue) and "Getting Started Guide" (yellow).

To start loading data, you first need to create a dataset. This will be used to organize various sources of data in the repository. You have three options to start:

- 1 Click the “Upload your buildings list” blue button on the home page
2. Click on the “+” in the upper right corner and select to Create a new Data Set
3. Click on Data in the left menu and select “Create new data set”

# Data Upload – File Formats



ClearlyEnergy +

Create new data set

DATA SET NAME

CE Dummy Certifications

ACTIONS

Add Data Files

Upload your data.

Upload a Spreadsheet

Synchronize Home Energy Score

Synchronize LEED

File types supported: **.csv, .xls, .xlsx, and .xml**.

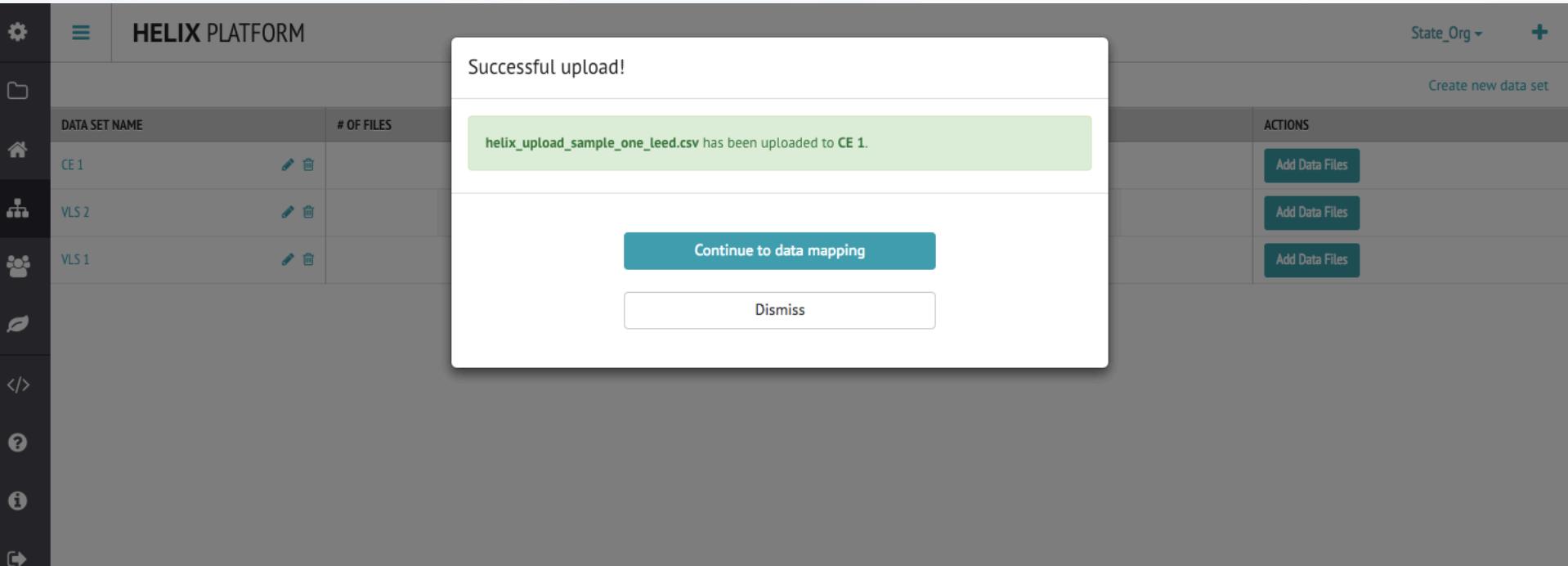
Note: only the first sheet of multi-sheet Excel files will be imported.

Dismiss

HELIX supports two types of upload and various file formats:

- Spreadsheet (csv,xls,xlsx) or xml file upload. Sample file formats are provided on the home page by clicking on “Download Sample Data”
- Synchronizing with the Home Energy Score repository. This method requires HELIX to be a third-party recipient of the HES data and the HES credentials to be saved in your organization’s settings.
- Location settings are required to synchronize LEED scores

# Data Upload - Process



The screenshot shows the HELIX Platform interface. On the left is a vertical toolbar with icons for settings, dashboard, files, home, users, data sets, code editor, help, and info. The main header says "HELIX PLATFORM". In the top right are dropdowns for "State\_Org" and a plus sign, and a button for "Create new data set". Below the header is a table with three rows:

DATA SET NAME	# OF FILES	ACTIONS
CE 1		
VLS 2		
VLS 1		

A modal window is centered over the table, displaying a success message: "Successful upload!" and "helix\_upload\_sample\_one\_leed.csv has been uploaded to CE 1.". It contains two buttons: "Continue to data mapping" and "Dismiss".

The file upload records the data in the HELIX database and archives a copy of the original data files.

Upon successful upload, you are prompted to continue to data mapping.

# Data Mapping

[STEP 1: Map Your Data](#)
[STEP 2: Review Your Data Mappings](#)
[BEDES](#)
[Collapse Tabs](#)

## MAPPING YOUR DATA TO HELIX

It is necessary to map your field names to HELIX field names. You can select from the list that appears as you start to type, which is based on the Building Energy Data Exchange Specification (BEDES), or you can type in your own name, as well as typing in the field name from the original datafile.

In addition, you need to specify where the field should be associated with Tax Lot data or Property data. This will affect how the data is matched and merged, as well as how it is displayed in the Inventory view.

**Field names for matching:** The following fields are used by HELIX to match records: **Jurisdiction Tax Lot ID, Custom ID 1, Normalized Address** (which combines Address Lines 1 and 2). If there are fields in a datafile mapped to these names, the program will attempt to match on those same names in existing records.

When you click the **Map Your Data** button, the program will show a grid with the new field names as the column headings and your data in the rows. In that view, you can still come back to the initial mapping screen and change the field mapping.

[Map HELIX fields to imported file fields](#)

**Duplicate** -- if fields are marked as duplicates they need to be resolved to have different names

HELIX uses a custom ID and/or the normalized address (derived from the address fields) to match new and existing records

Click when finished mapping

[Map Your Data](#)

At least one of the following:

HELIX

Mapped Fields

Map names from import file to standardized HELIX data field names

T1 Id (with inventory type Tax Lot), or Pm Property Id (with inventory type Property).

d.csv.1517330028

Set all fields to:

Property

HELIX HEADER	DATA FILE HEADER	INVENTORY TYPE	ROW 1	ROW 2	ROW 3	ROW 4	ROW 5
Internal ID	Internal ID	Property	T1	T1			
Ad	address_line_1	Property	1 Test Street	3 Test Street			
Normalized Address	address_line_2	Property					
Owner Address	development name	Property	My Development	My Development			
Address Line 2	city	Property	Cambridge	Cambridge			
Address Line 1		Property	MA	MA			
		Property					

Start typing to see a list of fields containing that word

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# Data Mapping Nomenclature

**Summary list of key field names: See Appendix for detailed mapping instructions by source**

## Property Data

- Address Line 1
  - E.g. 1 Main St
- Address Line 2
  - E.g. Lot 5
- Postal Code
  - Same as Zip Code
- City, State
- Custom ID 1
  - Any unique identifier linked to the building (not the certification)
- Anything else that is linked to the building

## Certification Data

- Two options:
1. Label headers with “Green Assessment” as well as:
    - Name
      - Must match existing certifications
    - Property Reference ID
      - Unique ID associated with the certification. It will not be used to map/merge homes
    - Property Metric
      - Number rating, for example 70
    - Or Property Rating
      - Text rating, for example Gold
  2. Label headers with Certification Names:
    - Names must match existing certifications
    - Save certification dates using “Green Assessment Property Date” header

## Measurement Data

Measurement data includes: home consumption, cost and solar information

# Data Mapping - Review

Return to previous screen

The mapping review allows you to check that your data is properly mapped before saving the mappings

Click to continue

[Back to Mapping](#)

4 Data Quality Results

[Save Mappings](#)

View by Property											
Address Line 1 (Property)	Address Line 2 (Property)	City (Property)	State (Property)	Postal Code (Property)	Associated Tax Lot ID	Year Built	Conditioned Floor Area	Internal Id	Dev		
1 Test Street		Cambridge	MA	2144		2005	2000	T1	My B		
3 Test Street		Cambridge	MA	2144		2005	2000	T1	My B		

Inspect data quality warnings

## Data Quality Results

File Name: helix\_upload\_sample\_one\_leed.csv.1517330028

Date Uploaded: January 30th 2018, 11:33:48 AM -05:00

TABLE	ADDRESS LINE 1	JURISDICTION TAX LOT ID	PM PROPERTY ID	CUSTOM ID	FIELD	ERROR MESSAGE
Table	Address Line 1	Jurisdiction Tax Lot ID	PM Property ID	Custom ID	Field	Error Message
PropertyState	1 Test Street	--	--	--	Custom ID 1 (Property)	Custom ID 1 (Property) is null
PropertyState	1 Test Street	--	--	--	PM Property ID	PM Property ID is null
PropertyState	3 Test Street	--	--	--	Custom ID 1 (Property)	Custom ID 1 (Property) is null
PropertyState	3 Test Street	--	--	--	PM Property ID	PM Property ID is null

Data quality results can be exported

[Export](#)

[Close](#)

# Data Matching

- HELIX looks for existing records to merge new information into:
  - duplicates are ignored
  - last data into HELIX becomes the current information

Matching Results for file: **home\_energy\_score.csv**

**Summary of mapping results**

- Total rows in the import file: 28
- New properties: 3
- New tax lots: 1
- Merged properties: 10
- Ignored property duplicates within the import file: 1
- Ignored tax lot duplicates within the import file: 27

**Restarts process**

**View building list**

**Confirm Save Mappings?**

Did you review your mappings? It's a good idea to double check your mappings. Once HELIX matches your properties you cannot undo or edit these mappings.

[Confirm mappings & start matching](#)
  
[Dismiss](#)



[Add another file](#)

[View my properties](#)

[Review matches](#)

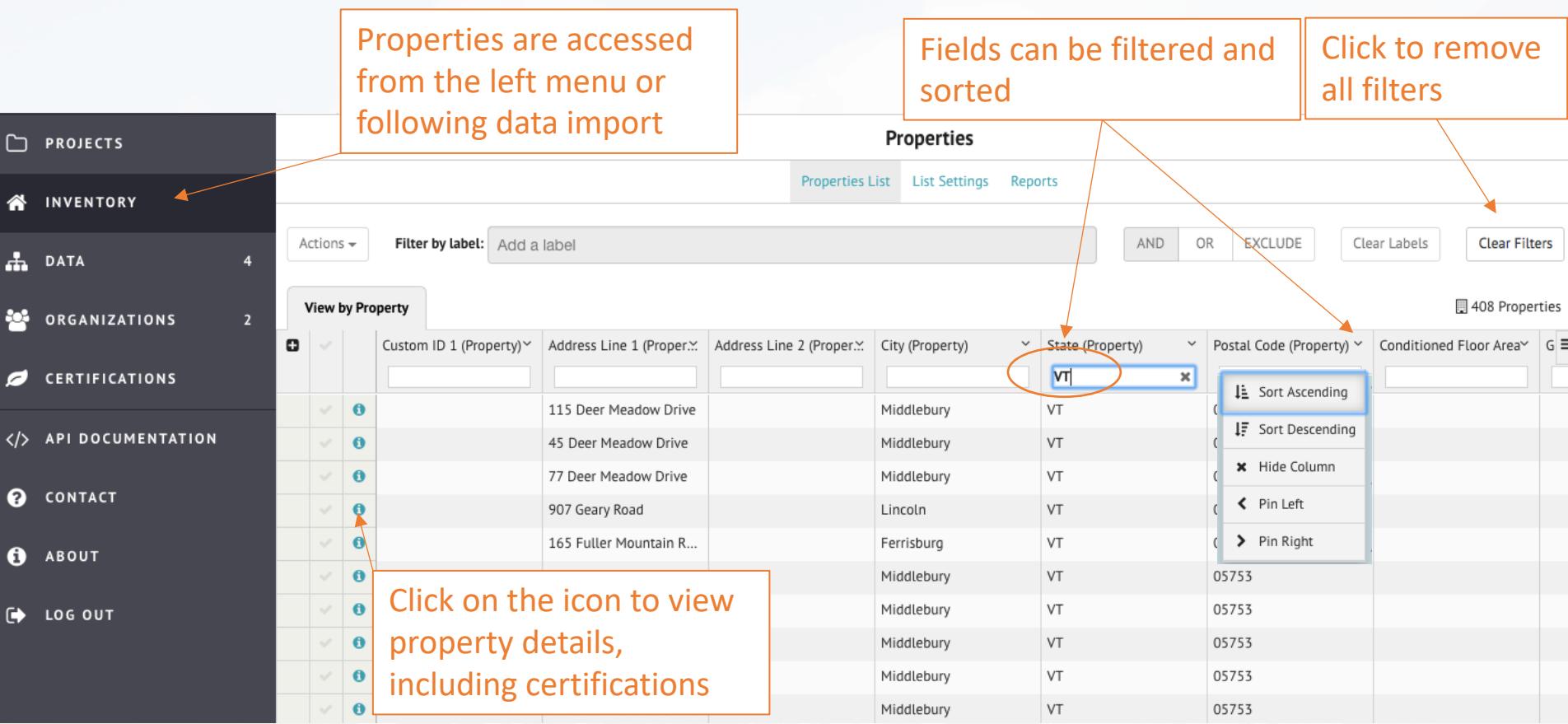
# Properties – List View

Properties are accessed from the left menu or following data import

Fields can be filtered and sorted

Click to remove all filters

Click on the icon to view property details, including certifications



Custom ID	Address Line 1	Address Line 2	City	State	Postal Code	Conditioned Floor Area
115 Deer Meadow Drive			Middlebury	VT	05753	
45 Deer Meadow Drive			Middlebury	VT	05753	
77 Deer Meadow Drive			Middlebury	VT	05753	
907 Geary Road			Lincoln	VT	05753	
165 Fuller Mountain R...			Ferrisburg	VT	05753	
			Middlebury	VT	05753	
			Middlebury	VT	05753	
			Middlebury	VT	05753	
			Middlebury	VT	05753	
			Middlebury	VT	05753	

Filtering rules:

Numeric fields can be filtered by the following operators: =, ==, !=, !, <>, <, <=, >, >=

For example: >1200 returns values greater than 1200

# Properties – List View – List Settings

List Settings control the order of columns displayed

## Property List Settings

Properties List    **List Settings**    Reports

### Column Order/Visibility

#### Add Shared Properties.

Include in your properties list all pr

Select or de-select all fields

There are 89 columns of data available

Select columns from the list below to n

Check/Un-check fields to show/hide

the order in which they appear. Pin the rows for them to be left-pinned in the list view.

	Column Name
✓	State (Property)
✓	Postal Code (Property)
✓	Custom ID 1 (Property)
✓	Address Line 1 (Property)
✓	Address Line 2 (Property)
✓	City (Property)
✓	Conditioned Floor Area
✓	Gross Floor Area

Select fields to “pin” to the left of the list view;  
fields can also be pinned through the filter function of the list display

Drag individual fields up or down to re-organize the list display

# Properties - Export

Actions ▾ **Filter**

View by Property

Property Type	Address Line 1 (Property)	Address Line 2 (Address)
✓	2 Test Street	
✓	3 Test Street	
✓	1 Test Street	
✓	1822 21st ave	
✓	4441 Lowes Creek Rd	
✓	12334 main street	
✓	143 rollins ave	

**Properties**

Export your Properties and Tax Lots

Export Name: File Name

CSV  XLS  HELIX CSV

Cancel Export

**Click to select all filtered properties for export**

Select individual properties for export

- Make sure to select HELIX CSV export to export certification details

# Properties – Detail View

The property detail view has two parts:

1. View certification details, including any measurements or links attached to certification
2. View property history

[Properties](#)

**Property Detail**

[Click to view measurements and report links](#)

**Property : 12334 main street**

[Edit](#)

	AWARD BODY	ASSESSMENT TYPE	SCORE/RATING	DATE CREATED	EXPIRATION DATE	STATUS	OPT-OUT?
	U.S. Department of Energy	Home Energy Score	9	2017-11-09		Non-Official Score	false
MEASUREMENT TYPE	SUB-TYPE	FUEL	QUANTITY	UNIT	STATUS	YEAR	
PROD		ELEC	2737	KWH	ESTIMATE		
CONS		ELEC	11811	KWH	ESTIMATE		
<b>REPORT LINKS</b>							
<a href="http://hescore-pnnl-label-be.s3.amazonaws.com/hes_label_X3P6F.pdf">http://hescore-pnnl-label-be.s3.amazonaws.com/hes_label_X3P6F.pdf</a>							

[Add/Remove Labels](#)   **Labels:** (no labels applied)

**Building change history**

FIELD	MASTER	HOME_ENERGY_SCORE.CSV.1517602
PM Property ID		
PM Parent Property ID		
Jurisdiction Property ID		
Custom ID 1 (Property)		
Address Line 1 (Property)	12334 main street	12334 main street

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# Application Programming Interface (API)

To programmatically retrieve information from HELIX, obtain an API Key from the HELIX administrator. This key will be valid across the regions where your organization is active

## Individual Home Query

1. Retrieve home certification and/or home solar data for individual by parcel ID
  - Sample API call
  - `curl -G -u email:api_key -v "https://helix.neep.org/api/v2/reso_export-xml/" --data-urlencode "property_uid=0000B4716S2"`
  - Mandatory parameter: property\_uid

## Batch Query

1. Retrieve list of property ids updated within a certain time window
  - Sample API call:
    - `curl -u email:api_key https://helix.neep.org/api/v2/reso-export-list/?start_date=2018-08-01&end_date=2018-09-01`
    - Optional parameters: start\_date and end\_date
    - Date format: 'yyyy-mm-dd'
    - Returns list of <property\_id> tags
2. Retrieve home certification and/or home solar data for individual home
  - Sample API call
    - `curl -u email:api_key https://helix.neep.org/api/v2/reso_export/?property_id=...`
    - Mandatory parameter: property\_id

# Contact & FAQ

-  TEST USER
-  PROJECTS
-  INVENTORY
-  DATA 2
-  ORGANIZATIONS 5
-  CERTIFICATIONS
-  API DOCUMENTATION
-  CONTACT
-  ABOUT
-  LOG OUT

SubOrgA ▾ +
HELIX PLATFORM

## Frequently Asked Questions

### What are the allowed file formats to upload data into HELIX?

You can upload Excel files (.xls, .xlsx), CSV and XML files into HELIX.

### What Green Certifications are allowed in HELIX?

Your HELIX installation will come populated with seven default certifications (DOE Home Energy Score, LEED for Homes, HERS Index, Energy Star Certified Homes, NGBS New Construction and Passive House). You can add new certification types by going to the [certifications](#) tab.

### Can HELIX data be exported in HPXML standard?

HPXML export is available

### Can HELIX display multiple certifications and sources of information for one record?

Yes, HELIX uses a standardized address to find existing homes and merge new sources of information into the home's record. Multiple certifications, solar information are all organized under a home address. When integrating a certification which duplicates an existing record, HELIX follows a last-in rule to determine the current record.

### Is the database of certifications already integrated within the platform?

HELIX provides a 'starter list' of standard certifications (DOE Home Energy Score, LEED for Homes, HERS Index, Energy Star Certified Homes, NGBS New Construction and Passive House), which is easy to supplement with certifications specific to your state, organization or program. Any record that then references that certification type will get mapped to it.

### Does HELIX integrate utility costs in auto population?

HELIX can collect annual estimates or actual utility costs. This data is, however, not part of the standard RESO export.

### Who will control opt-in/opt-out in HELIX?

The party (state agency/utility) managing the HELIX data will be responsible for tracking and managing the information, and can manually or via a file upload update opt-in or out preferences to reflect the property owners' wishes. The managing party may also choose to delete any records that opt-out. Opt-in/opt-out will happen at the certification level. Any certification with an opt-out flag is not available for export.

### Can records be identified by Property Tax ID

A tax ID can be incorporated into the HELIX by using the Jurisdiction Tax Lot ID field and the system will attempt to match records using that identifier. Make sure that your tax ID is properly mapped to that field.

Contact Information and Frequently Asked Questions are provided in the "Contact" tab

# About

VBUGNION@CLEARLYENERGY     HELIX PLATFORM    ClearlyEnergy 

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## About HELIX Platform

The Home Energy Labeling Information Exchange (HELIX) is a database which automatically populates real estate listings with home energy information from the U.S. Department of Energy's Home Energy Score and other sources. The database was developed by regional stakeholders as a free software tool to allow home buyers access to home energy information in the real estate purchasing process. Learn how to get started.

HELIX is managed by NEEP for more information please visit: [for more details](#)

### Development Team:

Managed by: [ClearlyEnergy](#)

HELIX is built on the SEED Platform™ managed by: [National Renewable Energy Laboratory](#)

With funding from the Department of Energy:

Version  
2.2.0.e1270a9

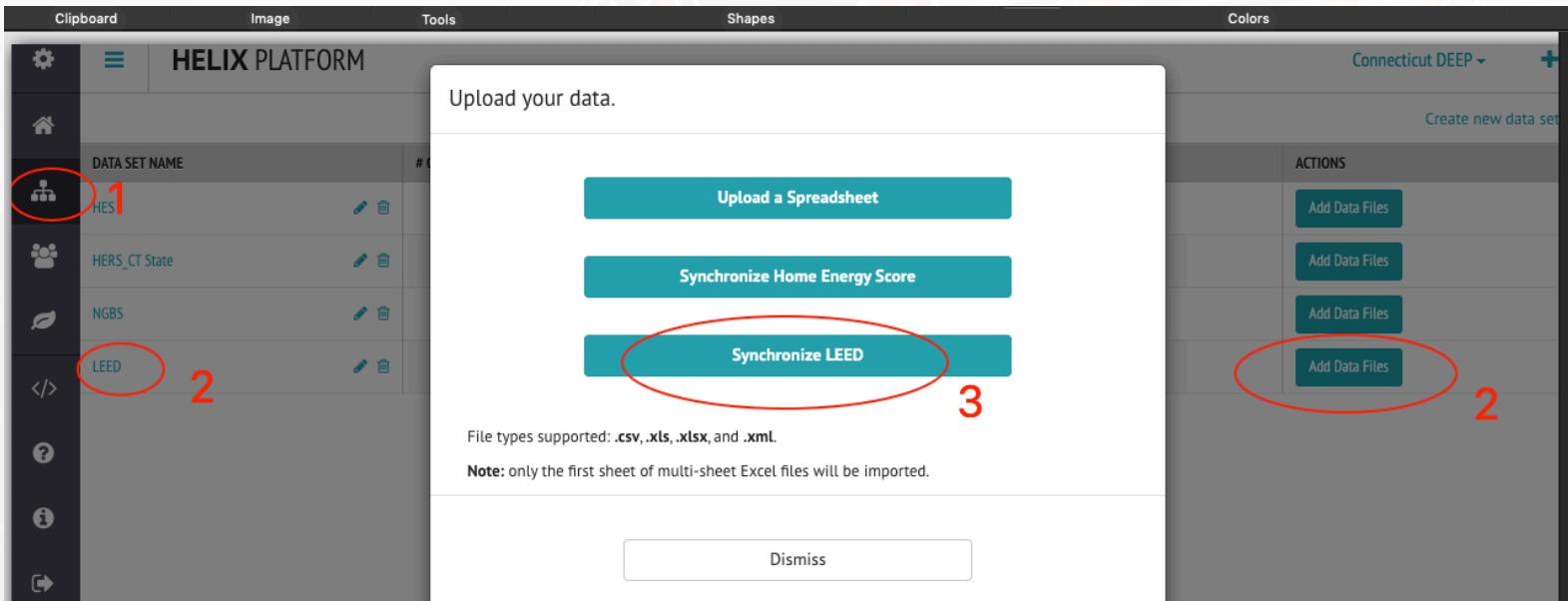
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# APPENDIX A: Detailed Mapping Instructions

# General Data Upload Rules

Data uploads and data synchronization can be done either automatically or manually using spread sheets.

1. Open the Data tab
2. Select appropriate folder for data upload and add data files
3. Uploads and data synchronizations from named sources (HES, LEED) have field headers that will map automatically, just click to map. Spreadsheet uploads require further details



The screenshot shows the HELIX Platform interface with a central modal window titled "Upload your data." The modal contains three main options: "Upload a Spreadsheet", "Synchronize Home Energy Score", and "Synchronize LEED". The "Synchronize LEED" button is circled in red with the number 3. Below the buttons, it says "File types supported: .csv, .xls, .xlsx, and .xml." and "Note: only the first sheet of multi-sheet Excel files will be imported." At the bottom of the modal is a "Dismiss" button.

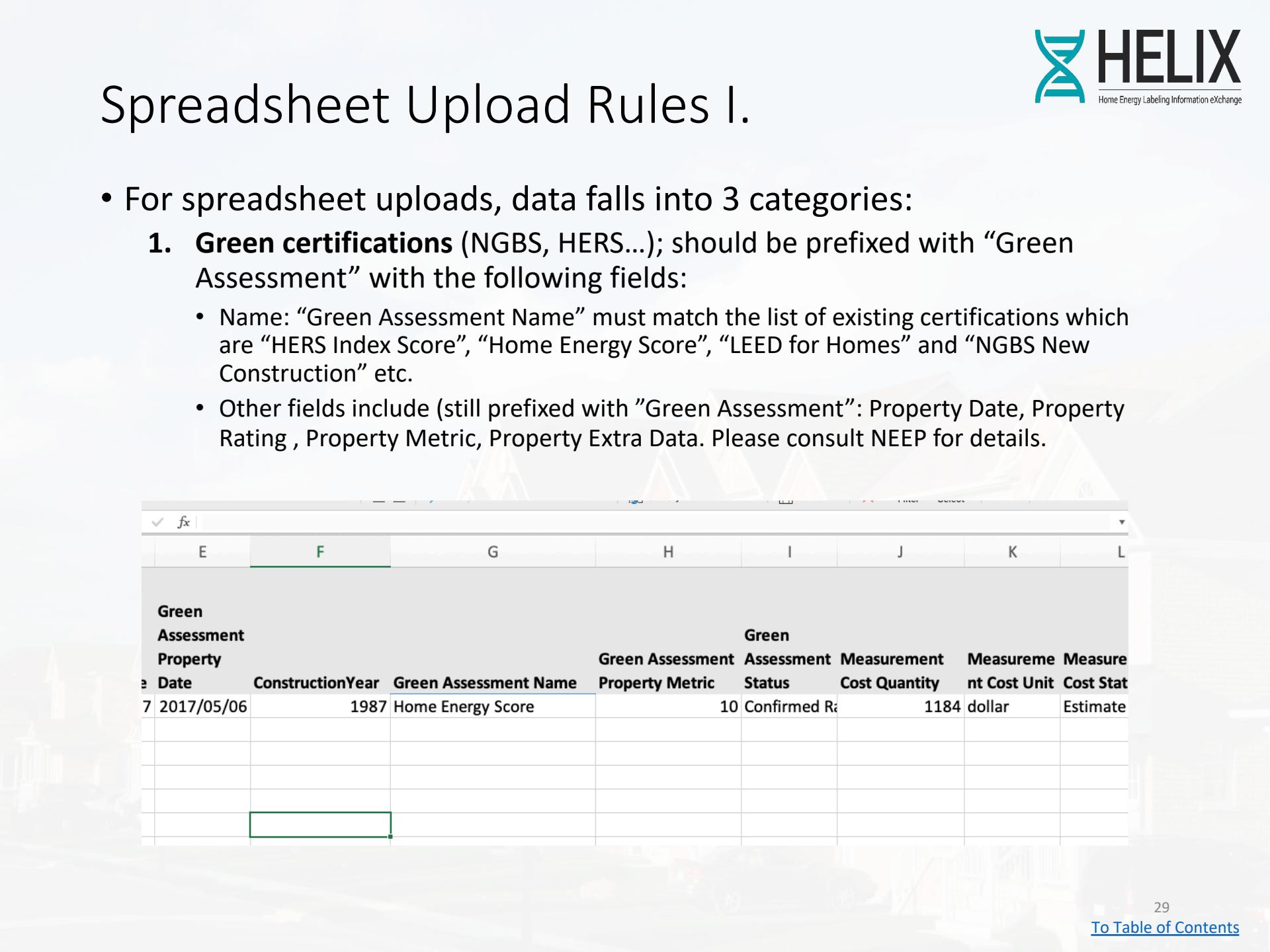
On the left side of the interface, there is a sidebar with various icons and a list of data sets:

- DATA SET NAME**
- HES (circled in red with 1)
- HERS\_CT State
- NGBS
- LEED (circled in red with 2)

On the right side, under the "ACTIONS" section, there are four "Add Data Files" buttons, each circled in red with the number 2.

# Spreadsheet Upload Rules I.

- For spreadsheet uploads, data falls into 3 categories:
  - Green certifications** (NGBS, HERS...); should be prefixed with “Green Assessment” with the following fields:
    - Name: “Green Assessment Name” must match the list of existing certifications which are “HERS Index Score”, “Home Energy Score”, “LEED for Homes” and “NGBS New Construction” etc.
    - Other fields include (still prefixed with “Green Assessment”): Property Date, Property Rating , Property Metric, Property Extra Data. Please consult NEEP for details.



A screenshot of a Microsoft Excel spreadsheet showing data entry for a green assessment. The spreadsheet has two main sections: 'Green Assessment' and 'Property'.

**Green Assessment:**

Date	ConstructionYear	Green Assessment Name
2017/05/06	1987	Home Energy Score

**Property:**

Green Assessment	Assessment	Measurement	Measureme	Measure
Property Metric	Status	Cost Quantity	nt Cost Unit	Cost Stat
10	Confirmed Ra	1184	dollar	Estimate

# Green Assessment Fields

- Source
  - Must match certification name in HELIX
- Reference ID
  - Unique ID for the certification/assessment (not for the home, other fields such as Custom ID 1, UBID exist to capture that)
- Status
- Metric / Rating
- Version
- Date
- Opt Out
  - True/False
- Extra Data
  - Any other non cost/consumption/savings data pertaining to audit

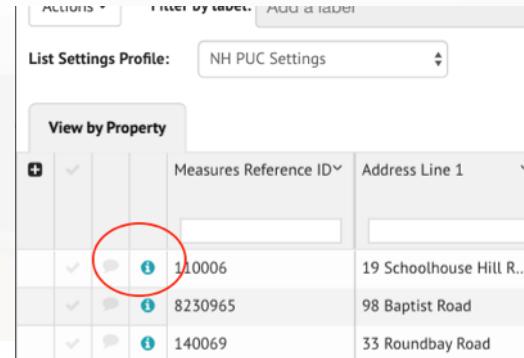
# Spreadsheet Upload Rules II.

## 2. Efficiency measures on the homes; should be prefixed with “Measures”

- “Measures Name” in the spread sheet needs to be on the BuildingSync list of possible measures e.g. “Install photovoltaic system”.
- Other fields: Implementation Status, Description, electric, current\_financing, installer, various cost fields, please consult NEEP for details.

Fig 1.  
Excel  
snippet

A	B	Step 2 to BO
<b>Measures Name</b>		
1		
2 Install photovoltaic system	Completed	200\$
3 Install photovoltaic system	Completed	200\$
4 Install photovoltaic system	Completed	200\$



The screenshot shows the BuildingSync software's properties view. A list of measures is displayed with columns for Measures Reference ID and Address Line 1. An info icon (a blue circle with a white question mark) is circled in red next to the first measure (Reference ID 110006). The list settings profile is set to "NH PUC Settings".

Measures Reference ID	Address Line 1
110006	19 Schoolhouse Hill R...
8230965	98 Baptist Road
140069	33 Roundbay Road

Fig. 3 (left): Click info in properties view to see measures as shown in Fig. 4 (below).

CATEGORY	MEASURE NAME	MEASURE INFORMATION
Renewable Energy Systems	Install photovoltaic system	Status: Completed Recommended: false Scale: Entire facility Category Affected: Other Installation Cost: Material Cost: M&V Cost: Residual Cost: Total First Cost: Capital Replacement Cost: Description: 0 Electric: Installer: Current Financing: Ownership: Seller Owned Reference ID: 110006 Source: Program Sponsor

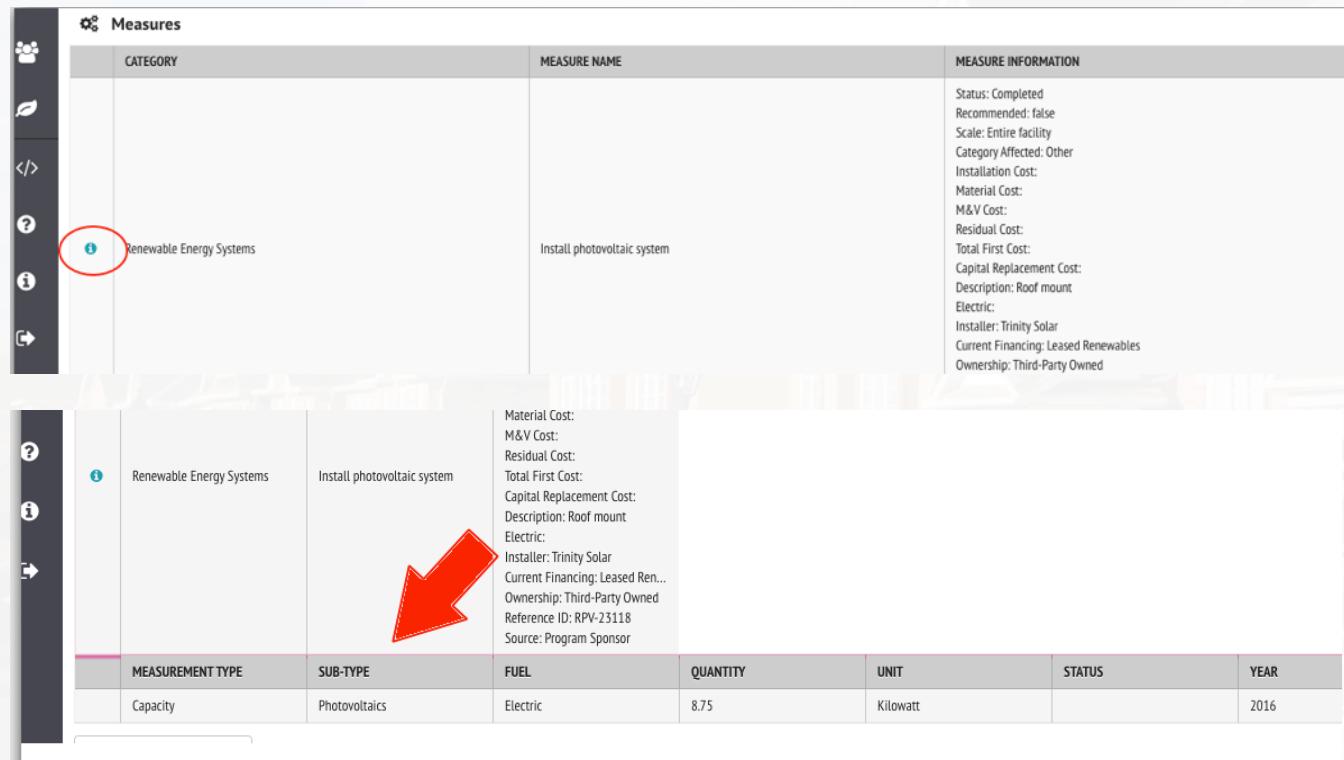
# Measures Fields

- Name: should be part of BuildingSync definitions
- Reference ID: unique project identifier
- Current Financing: In
- Electric
- Installer
- Property Measure Name
- Description
- Implementation Status
- Application Scale
- Recommended
- Cost MV
- Cost Total First
- Cost Installation
- Cost Material
- Cost Capital Replacement
- Cost Residual Value
- Category Affected

# Spreadsheet Upload Rules III.

**3. Measurements** or estimated data relating to either green certifications or measures such as photovoltaic generation, mmbtu (energy) consumption, utility costs; should be prefixed with “Measurement”.

- General field construction is Measurement  
Production/Consumption/Cost/Emissions/Capacity  
Unit/Quantity/Status/Year/Measurement Type/Measurement Subtype
- Example: Measurement Production Fuel or Measurement Consumption Unit



Measures						
CATEGORY	MEASURE NAME	MEASURE INFORMATION				
Renewable Energy Systems	Install photovoltaic system	Status: Completed Recommended: false Scale: Entire facility Category Affected: Other Installation Cost: Material Cost: M&V Cost: Residual Cost: Total First Cost: Capital Replacement Cost: Description: Roof mount Electric: Installer: Trinity Solar Current Financing: Leased Renewables Ownership: Third-Party Owned				
Renewable Energy Systems	Install photovoltaic system	Material Cost: M&V Cost: Residual Cost: Total First Cost: Capital Replacement Cost: Description: Roof mount Electric: Installer: Trinity Solar Current Financing: Leased Ren... Ownership: Third-Party Owned Reference ID: RPV-23118 Source: Program Sponsor				
MEASUREMENT TYPE	SUB-TYPE	FUEL	QUANTITY	UNIT	STATUS	YEAR
Capacity	Photovoltaics	Electric	8.75	Kilowatt		2016

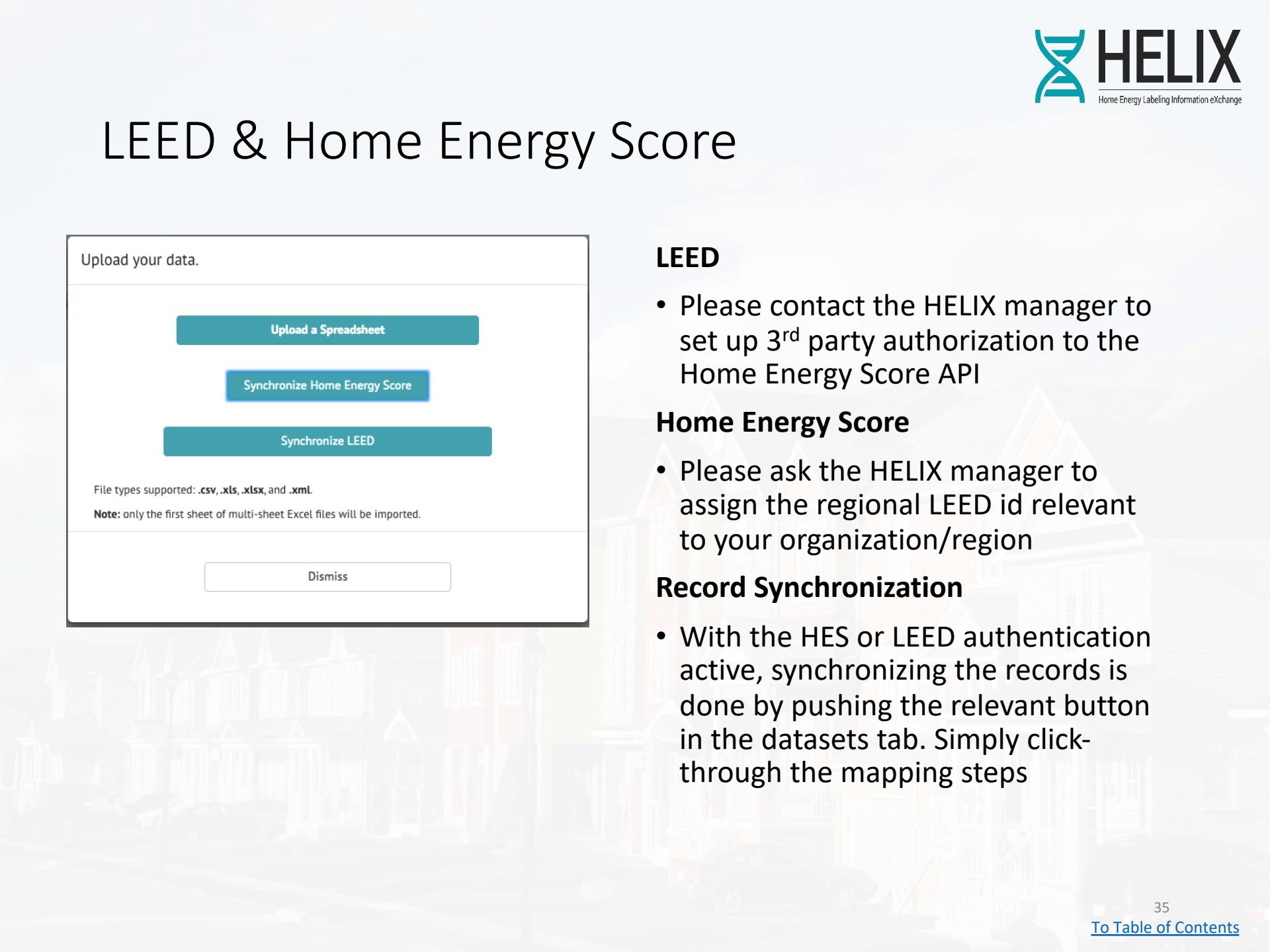
Fig. 5: In measures view similar to Fig. 4, click info to show measurements

Fig. 6:  
Measurements

# Measurement Fields

- The general label for measurements is
  - Measurement **Type Description**
- **Type** should be one of: Capacity, Production, Consumption, Cost or Emissions
- **Description** should include the following, with Measurement Type, Fuel, Unit and Status being required :
  - Quantity: numeric value
    - Measurement Savings Quantity= 2300
  - Measurement Type: repeat type
    - Measurement Production Measurement Type = Capacity
  - Measurement SubType: PV, Wind
    - Measurement Capacity Measurement SubType = PV
  - Fuel: Electric, Natural Gas, Heating Oil, Propane, Cord Wood, Pellet Wood
    - Measurement Capacity Fuel = Electric
  - Unit: kw, kwh, therms, therm, gallons, cords, pounds, mmbtu, dollars, dollar, tons\_ghg, tons\_CO2, tons\_CO2e
    - Measurement Capacity Unit = kw
  - Status: in Actual, Estimated, Partially Estimated
  - Year: any date
- If values exist for multiple fuels, prefix the label with the unit, e.g.
  - Measurement Savings Unit Dollars= dollar
  - Measurement Savings Unit Mmbtu = mmbtu

# LEED & Home Energy Score



Upload your data.

**Upload a Spreadsheet**

**Synchronize Home Energy Score**

**Synchronize LEED**

File types supported: **.csv, .xls, .xlsx, and .xml**.

**Note:** only the first sheet of multi-sheet Excel files will be imported.

**Dismiss**

## LEED

- Please contact the HELIX manager to set up 3<sup>rd</sup> party authorization to the Home Energy Score API

## Home Energy Score

- Please ask the HELIX manager to assign the regional LEED id relevant to your organization/region

## Record Synchronization

- With the HES or LEED authentication active, synchronizing the records is done by pushing the relevant button in the datasets tab. Simply click-through the mapping steps

# LEED & HES: Datasets Mapped Automatically

No changes in mapping required:

- LEED
- Home Energy Score

Map HELIX fields to imported file fields		Map Your Data			
HELIX		home_energy_score.csv			
Set all fields to: Property		Mapped Fields			
INVENTORY TYPE	HELIX HEADER	MEASUREMENT UNITS	DATA FILE HEADER	ROW 1	ROW 2
Property	City		City	Glocester	Coventry
Property	Measurement Capacity Quantity		Measurement Capacity Quantity		
Property	Green Assessment Name		Green Assessment Name	Home Energy Score	Home Energy Score
Property	Measurement Production Measu		Measurement Production Measurement Subtype		
Property	Green Assessment Property Sou		Green Assessment Property Source	Department of Energy	Department of Energy
Property	Measurement Production Quant		Measurement Production Quantity		
Property	Measurement Capacity Measure		Measurement Capacity Measurement Subtype		
Property	Green Assessment Property Met		Green Assessment Property Metric	6	3
Property	Measurement Production Unit		Measurement Production Unit		

If there are any issues at the mapping state, clicking "Map HELIX Fields to imported file fields" button should reset map to default values

## APPENDIX B: Dictionary of Column Headers

[C-G](#)

[H-M](#)

[M-U](#)

# Dictionary A-G

Column Header	Data Type	Description
Address Line 1	String	
Address Line 2	String	Used to describe unit or apartment number. Do not include lot numbers.
Certified Passive House	Boolean	See PHIUS+
County	String	
Custom ID 1	Reference	Unique ID associated directly with the home, for example parcel or tax ID
DOE Zero Energy Ready Home	Boolean	The U.S Department of Energy Zero Energy Ready Homes are verified by a qualified third-party and are at least 40%-50% more energy efficient than a typical new home. This generally corresponds to a Home Energy Rating System (HERS) Index Score in the low- to mid-50s, depending on the size of the home and region in which it is built. This value is set to True when the certification is awarded.
DOE Zero Energy Ready Home Date	Date	The date on which the certification was awarded
EarthCraft	String	Earthcraft is a residential green building program of the Greater Atlanta Home Builders Association in partnership with Southface Energy Institute, both of which are Atlanta based non-profits that has developed its own guidelines and ratings system to help homebuilders create eco-friendly homes. Homes are rated with a combination of badges: Certified; Health Badge; Comfort Badge; Performance Badge
Efficiency Vermont Residential New Construction Program	String	The Efficiency Vermont Residential New Construction Program rates homes as "Efficiency Vermont Certified" or "Efficiency Vermont Certified High Performance Home"
ENERGY STAR Certified Homes	Boolean	The U.S. Environmental Protection Agency ENERGY STAR Certified Homes is a set of optional construction practices and technologies (above minimum code requirements) that builders can follow to upgrade a new home's energy efficiency beyond minimum code requirements. ENERGY STAR certified homes are at least 10% more energy efficient than homes built to code and achieve a 20% improvement on average. This value is set to True when the certification is awarded.
Green Assessment Property Date	Date	The date on which the certification or rating was awarded.
Green Assessment Property Metric	Numeric	This column refers to numeric scores assigned to the property by the certification board. See Home Energy Score and HERS Index.
Green Assessment Property Name	String	Contains the name of the certification as listed in the certifications tab on Helix e.g. LEED for Homes, HERS Index, and Home Energy Score
Green Assessment Property Rating	String	Depending on the Certification Board, there are different levels of certifications awarded. See NGBS New Construction and LEED for Homes.
Green Assessment Property Status	String	Status of the assessment. Any value accepted. RESO compliant values are "Complete" and "In Process"
Green Assessment Property Reference Id	String	Unique ID associated with the certification

# Dictionary H-M

Column Header	Data Type	Description
HERS Index Score	Numeric	The Residential Energy Services Network (RESNET)'s HERS Index is a relative performance score on a scale up to 150. The lower the score, the better the home is on energy performance. A home built to the 2006 International Energy Conservation Code is awarded a rating of 100 - the RESNET reference home; a home with a HERS Index Score of 70 is 30% more energy efficient than the RESNET Reference Home and A home with a HERS Index Score of 130 is 30% less energy efficient than the RESNET Reference Home.
Home Energy Score	Numeric	Home Energy Score uses a simple 1-to-10 scale where a 10 represents the most energy efficient homes.
Indoor airPlus	Boolean	A U.S. Environmental Protection Agency initiative which builds on the foundation of EPA's ENERGY STAR requirements for new homes. Indoor airPLUS is a voluntary partnership and labeling program that helps new home builders improve the quality of indoor air by requiring construction practices and product specifications that minimize exposure to airborne pollutants and contaminants.
LEED for Homes	String	LEED, or Leadership in Energy and Environmental Design, is the most widely used green building rating system in the world. Available for virtually all building, community and home project types, LEED provides a framework to create healthy, highly efficient and cost-saving green buildings. LEED certification is a globally recognized symbol of sustainability achievement. LEED certification has 5 rating systems—Building and Design, Interior Design and Construction, Building Operations and Maintenance, Neighborhood Development, and Homes. Then there are 4 certification levels— Certified, Silver, Gold and Platinum.
Measurement Consumption Unit Fuel	String	Defines the home energy consumption associated with a green certification or an implementation measure on a home. Fuel should be amongst: Natural Gas, Electric, Heating Oil, Propane, Cord Wood, Pellet Wood. The field value should be amongst: kwh, kw, gal, mmbtu, ton, lb, cord, therm, dollar, ghg, CO2e
Measurement Consumption Quantity Fuel	Numeric	Defines the home energy consumption associated with a green certification or an implementation measure on a home. Fuel should be amongst: Natural Gas, Electric, Heating Oil, Propane, Cord Wood, Pellet Wood.
Measurement Consumption Measurement Type Fuel	String	Set to "Consumption"
Measurement Consumption Status Fuel	String	Defines the home energy consumption associated with a green certification or an implementation measure on a home. Fuel should be amongst: Natural Gas, Electric, Heating Oil, Propane, Cord Wood, Pellet Wood. Any string is accepted. RESO values are: Estimate, Partially Estimated, Actual

# Dictionary M

Column Header	Data Type	Description
Measurement Savings Quantity Unit	Numeric	Defines the potential savings associated with a green certification or an implementation measure on a home. Unit should be amongst: kwh, kw, therms, therm, gallons, chords, pounds, mmbtu, dollars, dollar, tons_ghg, tons_CO2, tons_CO2e
Measurement Savings Measurement Type Unit	String	Set to "Savings"
Measurement Savings Status Unit	String	Defines the potential savings associated with a green certification or an implementation measure on a home. Fuel should be amongst: Natural Gas, Electric, Heating Oil, Propane, Cord Wood, Pellet Wood. Any string is accepted. RESO values are: Estimate, Partially Estimated, Actual
Measurement Type Unit	String	Defines cost, savings, consumption, production, capacity or emissions associated with a green certification or an implementation measure on a home. Type should one of the categories listed. Unit should be amongst: kwh, kw, therms, therm, gallons, chords, pounds, mmbtu, dollars, dollar, tons_ghg, tons_CO2, tons_CO2e
Measurement Type Quantity	Numeric	Defines cost, savings, consumption, production, capacity or emissions associated with a green certification or an implementation measure on a home. Type should one of the categories listed.
Measurement Type Measurement Type	String	Defines cost, savings, consumption, production, capacity or emissions associated with a green certification or an implementation measure on a home. Both type and content of cell should one of the categories listed.
Measurement Type Status	String	Defines cost, savings, consumption, production, capacity or emissions associated with a green certification or an implementation measure on a home. Type should one of the categories listed. Any string is accepted. RESO values are: Estimate, Partially Estimated, Actual
Measures	Prefix	Refers to a program which aims to reduce non-renewable energy consumption e.g. Installation of Photovoltaic Cells (Solar). Note: other descriptors of the measures not listed such as costs or system impacted are available upon request
Measures Description	String	Description of measure.
Measures Name	String	The measures names hould be in the list of BuildingSync measures. Most common will be "Install photovoltaic system"
Measures Reference ID	String	Unique ID with Measures' service providers - externally generated.
Measures Source	String	Should be amongst: Administrator, Assessor, Builder, Contractor/Installer, Other, Owner, Program Sponsor, Program Verifier, Public Records
Measures Implementation Status	String	Should be amongst: Proposed, Evaluated, Selected, Initiated, In Progress, Discarded, Completed, MV, Verified, Unsatisfactory
Measures Installer	String	Name of installer
Measures Electric	String	RESO standard descriptor of system: Net Meter, Energy Storage Device, Pre-Wired for Renewables, Ready for Renewables
Measures Ownership	String	RESO standard descriptor of ownership: Seller Owned, Third-Party Owned
Measures Current Financing	String	RESO standard descriptor of financing: Leased Renewables, Power Purchase Agreement, Property-Assessed Clean Energy

# Dictionary N-U

Column Header	Data Type	Description
NGBS New Construction	String	Home Innovation Research Labs certifies homes to the ICC-700 National Green Building Standard (NGBS), which has undergone the full consensus process and received approval from the American National Standards Institute (ANSI). Home Innovation Research Labs provides project certification to the NGBS. NGBS applies to both single-family homes and multifamily buildings. Certification options also exist for new construction, remodel projects (both whole-home and functional areas such as a kitchen or bathroom) and land development/subdivision. Homes may qualify for a bronze, silver, gold, or emerald certification level depending on the number of green building practices met.
NGBS New Construction Version	String	Each version is defined using different criteria and applies to different types of buildings. Details found at <a href="https://www.homeinnovation.com/greenscoring">https://www.homeinnovation.com/greenscoring</a>
Passive House	Boolean	Passive house is a voluntary standard for energy efficiency in a building, which reduces the building's ecological footprint. It results in ultra-low energy buildings that require little energy for space heating or cooling.
PHIUS+	Boolean	Passive House Institute US initiative. The PHIUS+ 2015 Passive Building Standard provides the climate-specific sweet spot where aggressive energy and carbon reduction overlap with cost effectiveness. PHIUS+ 2018 is the first updated revision to the PHIUS+ 2015 standard, and will fully replace PHIUS+ 2015. This update focuses on adding more nuance for different building types, and supporting an overall transition to renewable energy.
Postal Code	String	5-digit postal code.
Property Type	String	Valid for certain states, describes property as Multi-Family Residential, Single-Family New Construction, Single-Family Home, Single-Family Green Building Renovation, etc.
State	String	2 character State abbreviation
Updated	Date	Date the record was most recently updated