











# SEED PLATFORM<sup>TM</sup> 2.12 Analysis Features

Created October 2021

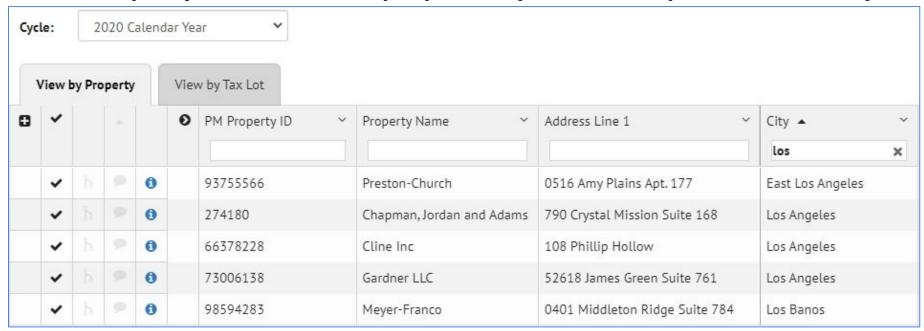
#### **Analysis Features in SEED**

- There are currently three different types of analysis in SEED
  - BETTER
    - Runs a BETTER analysis from the property data in SEED
  - BSyncr
    - Makes a Building Sync file from the property data in SEED to be used with the NMEC (Normalized Metered Energy Consumption) program
    - Algorithms are based on methods in this Github repository <a href="https://github.com/kW-Labs/nmecr">https://github.com/kW-Labs/nmecr</a>
  - EUI
    - Calculates the EUI of a property based on the meter data and the gross floor area

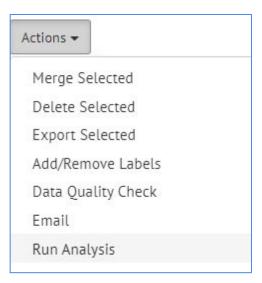
### **Generating an Analysis**

#### **Property List**

In the Property List, select the properties you want to perform an analysis on



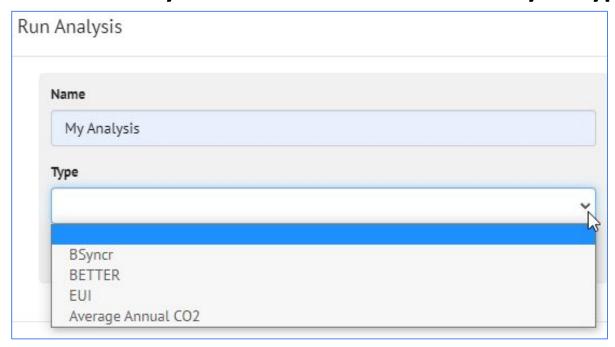
 Select Run Analysis from the Actions menu choice



### Generating an Analysis (cont'd)

#### **Property List**

Add an Analysis Name and select the Analysis Type



• Depending on the analysis type, there will be various other parameters to set (see the pages for each Analysis Type below for details)

### Generating an Analysis (cont'd)

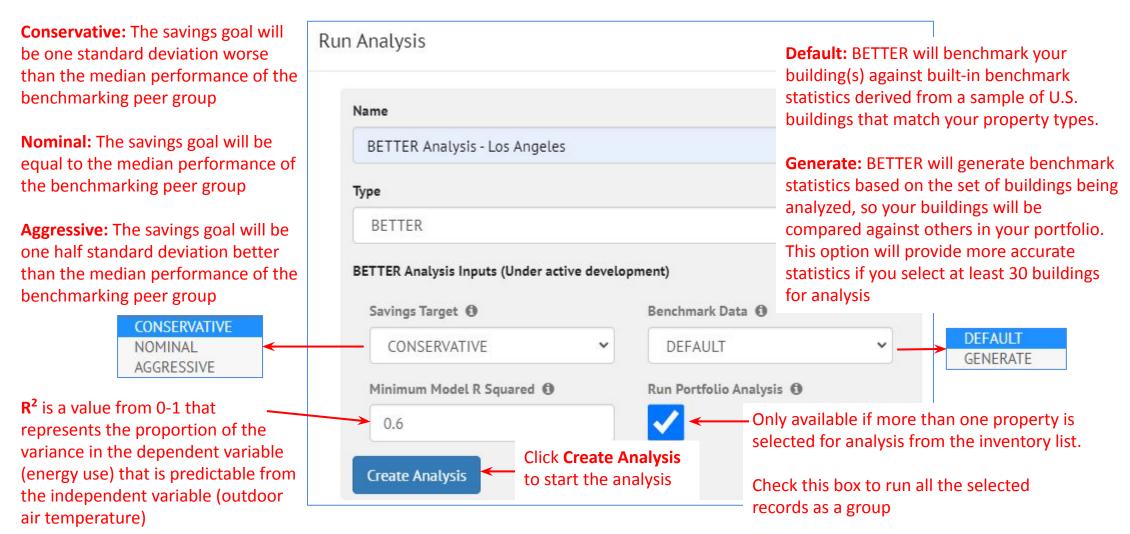
- Start the analysis
- Go to Analysis to see the results



	Analyses					
ANALYSIS NAME (USER DEFINED)	ACTIONS	NUMBER OF PROPERTIES	TYPE	CONFIGURATION	RUN STATUS	RUN DATE
BSyncr - Los Angeles	â	4	BSyncr	<ul> <li>model_type = Simple Linear Regression</li> </ul>	Completed	10-14-2021 18:31
CO2 - All records	â	110	CO2		Completed	10-14-2021 18:30
EUI - All records	â	110	EUI		Completed	10-14-2021 18:29
BETTER Analysis - Los Angeles		4	BETTER	<ul> <li>benchmark_data = DEFAULT</li> <li>savings_target = CONSERVATIVE</li> <li>preprocess_meters = false</li> <li>portfolio_analysis = true</li> <li>min_model_r_squared = 0.6</li> </ul>	Completed	10-14-2021 18:23
BETTER - All records	â	110	BETTER	<ul> <li>benchmark_data = DEFAULT</li> <li>savings_target = CONSERVATIVE</li> <li>preprocess_meters = false</li> <li>portfolio_analysis = true</li> <li>min_model_r_squared = 0.6</li> </ul>	Completed	10-14-2021 18:16

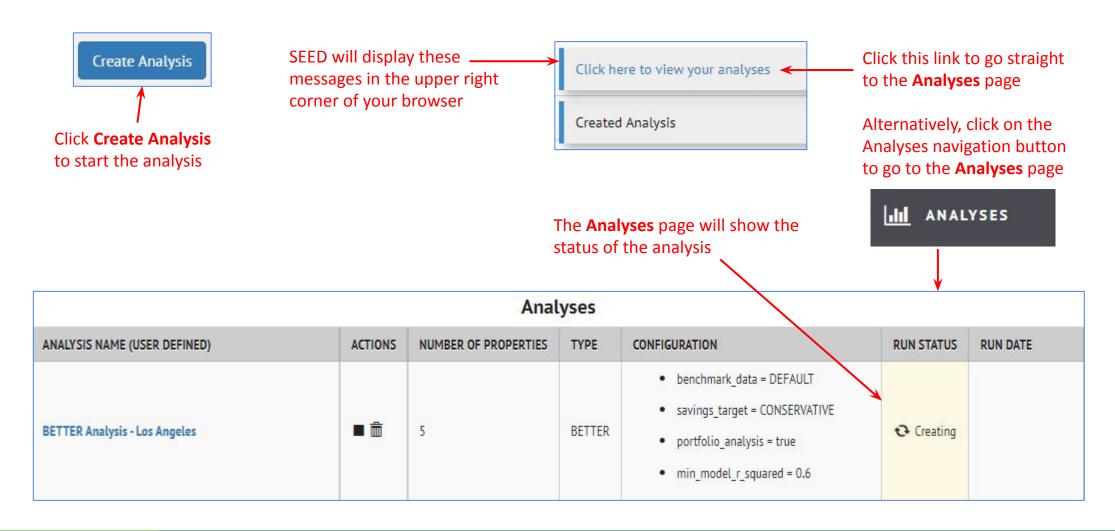
## **BETTER: Setting up the Analysis**

- In the Property List, select the properties you want to perform an analysis on
- Select Run Analysis from the Actions menu choice
- Add an Analysis Name and set Type = BETTER



### **BETTER:** Running the Analysis

- Click the "Create Analysis" button to start the analysis
- Go to the Analyses page to see the status of the analysis



## **BETTER:** Running the Analysis

#### **Analyses page**

• The run status shows the progress of the analyses

Analyses									
ANALYSIS NAME (USER DEFINED)	ACTIONS	NUMBER OF PROPERTIES	TYPE	CONFIGURATION	RUN STATUS	RUN DATE			
BETTER Analysis - Los Angeles	<b>■</b> â	5	BETTER	<ul> <li>benchmark_data = DEFAULT</li> <li>savings_target = CONSERVATIVE</li> <li>portfolio_analysis = true</li> <li>min_model_r_squared = 0.6</li> </ul>	• Creating				

Analyses										
ANALYSIS NAME (USER DEFINED)	ACTIONS	NUMBER OF PROPERTIES	TYPE	CONFIGURATION	RUN STATUS	RUN DATE				
BETTER Analysis - Los Angeles		5	BETTER	<ul> <li>benchmark_data = DEFAULT</li> <li>savings_target = CONSERVATIVE</li> <li>portfolio_analysis = true</li> <li>min_model_r_squared = 0.6</li> </ul>	<b>2</b> Running	10-04-2021 14:29				

Analyses									
ANALYSIS NAME (USER DEFINED)	ACTIONS	NUMBER OF PROPERTIES	TYPE	CONFIGURATION	RUN STATUS	RUN DATE			
BETTER Analysis - Los Angeles	â	5	BETTER	<ul> <li>benchmark_data = DEFAULT</li> <li>savings_target = CONSERVATIVE</li> <li>portfolio_analysis = true</li> <li>min_model_r_squared = 0.6</li> </ul>	Completed	10-04-2021 14:29			

Analyses										
ANALYSIS NAME (USER DEFINED)	ACTIONS	NUMBER OF PROPERTIES	TYPE	CONFIGURATION	RUN STATUS	RUN DATE				
BETTER Analysis - Los Angeles	â	5	BETTER	<ul> <li>benchmark_data = DEFAULT</li> <li>savings_target = CONSERVATIVE</li> <li>portfolio_analysis = true</li> <li>min_model_r_squared = 0.6</li> </ul>	Completed	10-04-2021 14:2				

Click on the Analysis Name link to view each analysis in the Portfolio

◀ Analyses	Analysis: BETTER Analysis - Los Angeles									
NUMBER OF RUN	TYPE	CONFIGURATION	RUN STATUS	LATEST MESSAGE	RUN DATE	RUN DURATION	RUN AUTHOR			
5	BETTER	<ul> <li>benchmark_data = DEFAULT</li> <li>savings_target = CONSERVATIVE</li> <li>portfolio_analysis = true</li> <li>min_model_r_squared = 0.6</li> </ul>	Completed		10-04-2021 14:31	23 seconds	LBNL 405, Robin			

RUN ID	PROPERTY	LATEST MESSAGES	OUTPUT FILES
2570	790 Crystal Mission Suite 168 😝	No reasonable change-point model could be found for this building's electricity consumption.	Portfolio Report 🕹 , Building Report 🕹
2571	108 Phillip Hollow 🕒		Portfolio Report 🕹 , Building Report 📥
2572	52618 James Green Suite 761	No reasonable change-point model could be found for this building's electricity consumption.	Portfolio Report 🚣 , Building Report 📥
2573	0516 Amy Plains Apt. 177 🕞		Portfolio Report 🕹 , Building Report 📥
2574	0401 Middleton Ridge Suite 784 🕒		Portfolio Report 🕹 , Building Report 🕹

← Analyses		Anal	lysis: BETTER A	nalysis - Los A	ingeles					
NUMBER OF RUNS	TYPE	CONFIGURATION		RUN STATUS	LATEST MESSAGE	RUN DATE	RUN DURATION	RUN AUTHOR		
5	BETTER	benchmark_dat     savings_target     portfolio_analy:     min_model_r_so	= CONSERVATIVE sis = true	Completed		10-04-2021 14:31	23 seconds	LBNL 405, Robin		
RUN ID	PROPERTY	PROPERTY LATEST MESSAGE				OUTPUT FILES				
2570	790 Crystal Mission Suite 168 🕒		No reasonable	e change-point model c	Portfolio Report	Portfolio Report 🕹 , Building Report 🕹				
2571	108 Phillip I	Hollow C+				Portfolio Report	t 🚣 , Building Report 🚣			
2572	52618 Jame	es Green Suite 761 🗗	No reasonable	e change-point model c	Portfolio Report	Portfolio Report 🕹 , Building Report 🕹				
2573	0516 Amy F	Plains Apt. 177 🕞					Portfolio Report	Portfolio Report 🕹 , Building Report 🕹		
2574	0401 Middl	leton Ridge Suite 784 🕒	1				Portfolio Report	t ♣, Building Report ♣		
Click Run ID to see the details for that building	to see t	ne Property link the results in ory Property	If there are the analysis, be displayed	, they will		Click the Portfolio link to download the entire Portfolio Report	link to o just th	the Building o download he report for uilding		

#### 

#### BETTER Analysis - Los Angeles - Run #2571

NUMBER OF RUNS	ТҮРЕ	CONFIGURATION	RUN STATUS	LATEST MESSAGE	RUN DATE	RUN DURATION
Click Run ID to		<ul> <li>benchmark_data = DEFAULT</li> <li>savings_target = CONSERVATIVE</li> <li>portfolio_analysis = true</li> <li>min_model_r_squared = 0.6</li> </ul>	Completed		10-04-2021 14:31	23 seconds
RUN ID	PROPERTY	LATE	ST MESSAGES	OUTPUT FIL	ES	
2571	108 Phillip Ho	low 🕒		Portfolio Rep	port 🕹 , Building Report 🕹	

#### Portfolio Report

#### BETTER V.1.0 Portfolio Summary Report

SEED Analysis BETTER Analysis - Los Angeles (224)
Generated at 2021-10-04

#### Overview

BETTER

Number of Buildings Total Gross Floor Area (ft<sup>2</sup>):

5 928,413.7

Potential Cost Savings: Potential Energy Savings:

\$823,435 43,371,310 kBTU

63.8% 78.2%

Electricity Energy/Cost Savings: Fossil Fuel Energy/Cost Savings:

56.1% 92.5%

**GHG** Emissions Reduction

(MTCC2e):

GHG Emissions Intensity Reduction (kgCO<sub>2</sub>e/ft<sup>2</sup>)

2,465.7 14.5

76.2%

#### **Building Report**

# BETTER V1.0 Building Summary Report Cline Inc Generated at

#### Overview

BETTER

Building Type: Gross Floor Area (ft<sup>2</sup>):

Office 304,406.6

Building Location: Closest Weather Station:

Los Angeles, California Station: 722874-93134:

Downtown L.A./Usc Campus

Potential Cost Savings: Potential Energy Savings:

\$392,192 11,911,574 kBTU

53.7% 60.0%

Electricity Energy/Cost Savings: Fossil Fuel Energy/Cost Savings:

2.4

51.9% 84.1%

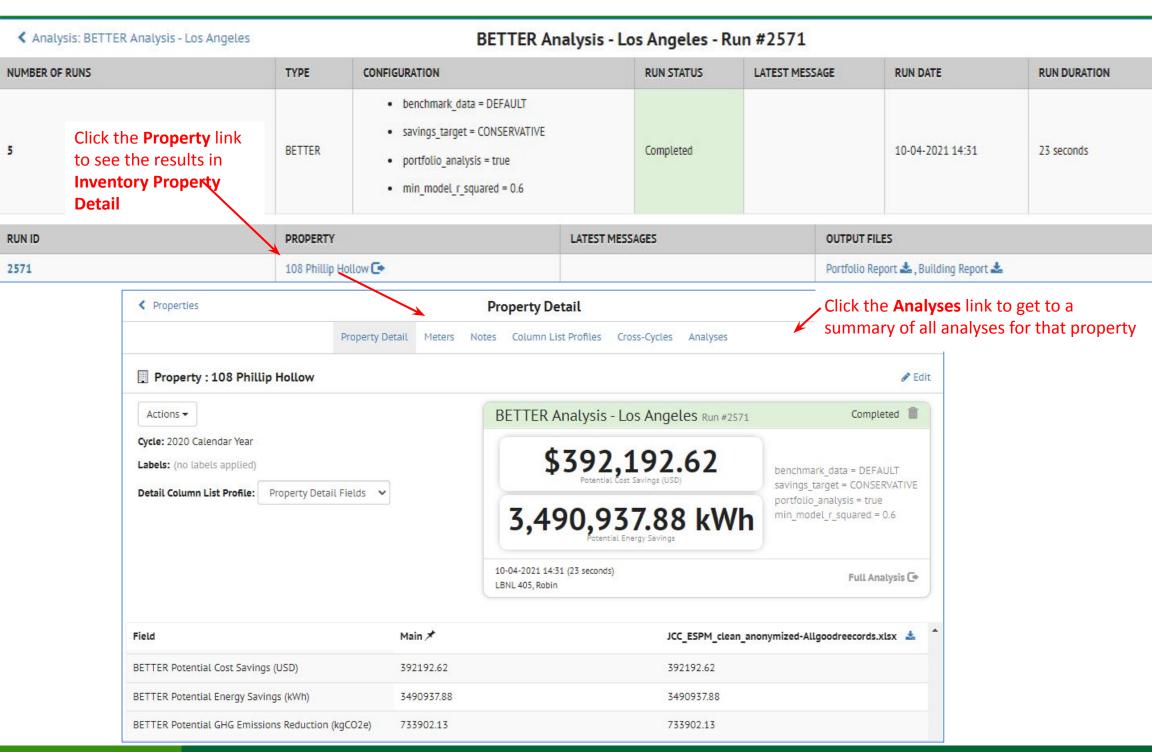
**GHG Emissions Reduction** 

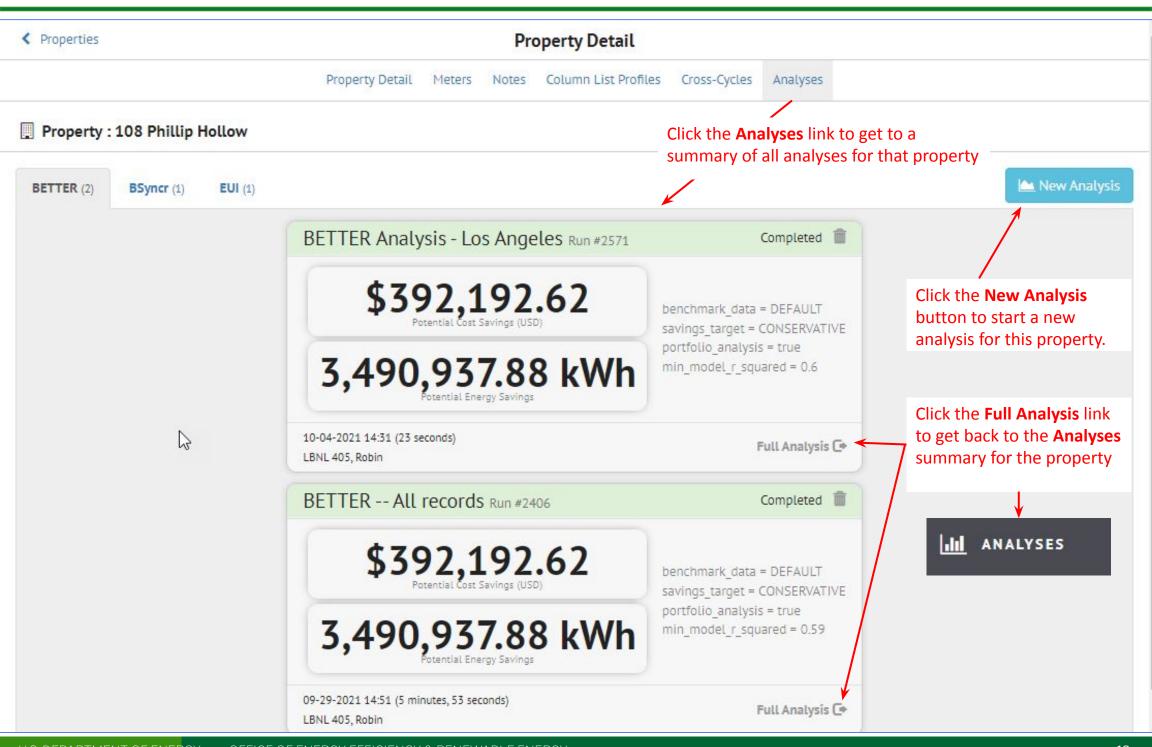
(MTCO<sub>2</sub>e):

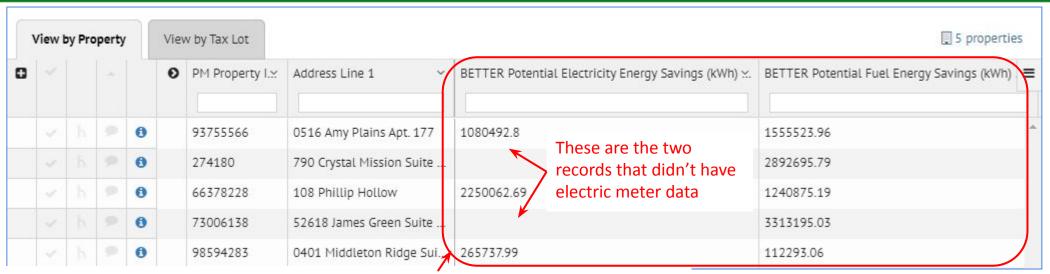
GHG Emissions Intensity Reduction (kgCO<sub>2</sub>e/ft<sup>2</sup>)

733.9

58.8 %







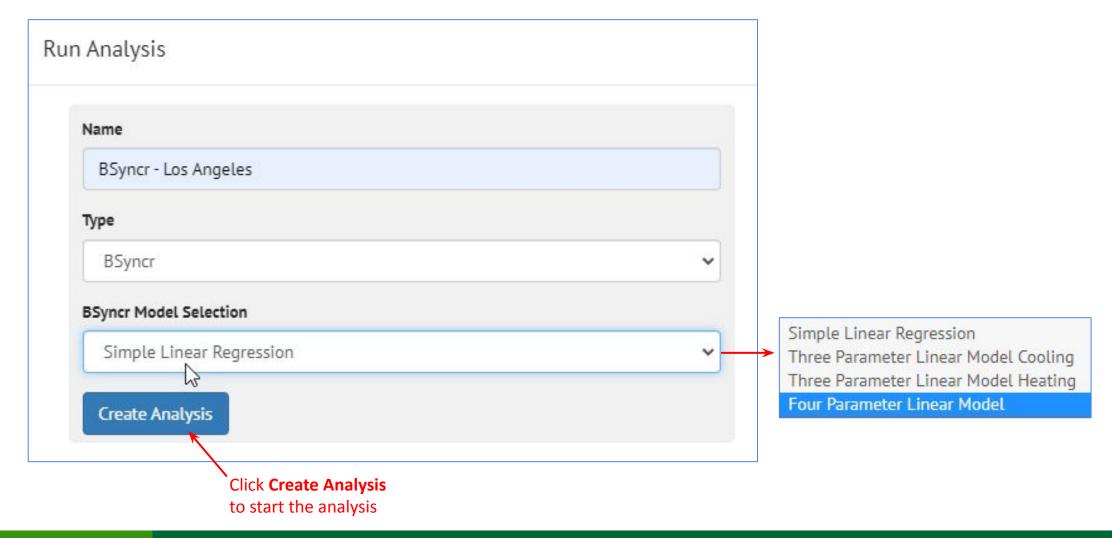
There are several BETTER fields that are available to view in the Inventory Property List View

,	1	BETTER Potential Cost Savings (USD)
		BETTER Potential Energy Savings (kWh)
•		
~		BETTER Potential GHG Emissions Reduction (kgCO2e)
~		BETTER Min Model R^2
~		BETTER Recommendation: Add/Fix Economizers
~		BETTER Recommendation: Add Wall/Ceiling Insulation
~		BETTER Recommendation: Check Fossil Baseload
~		BETTER Recommendation: Decrease Heating Setpoints
~		BETTER Recommendation: Decrease Infiltration
~		BETTER Recommendation: Decrease Ventilation
~		BETTER Recommendation: Eliminate Electric Heating
~		BETTER Recommendation: Increase Cooling Setpoints
~		BETTER Recommendation: Increase Cooling System Efficiency

~	7	BETTER Recommendation: Increase Heating System Efficiency
~		BETTER Recommendation: Reduce Equipment Schedules
~	I	BETTER Recommendation: Reduce Lighting Load
~	7	BETTER Recommendation: Reduce Plug Loads
~	1	BETTER Recommendation: Upgrade Windows
~		BETTER Analysis Id
~	I	BETTER Potential Electricity Cost Savings (USD)
~	#	BETTER Potential Fuel Cost Savings (USD)
~	1	BETTER Potential Electricity Energy Savings (kWh)
~		BETTER Potential Fuel Energy Savings (kWh)
~	I	BETTER Potential Electricity GHG Emissions Reduction (kgCO2e)
~		BETTER Potential Fuel GHG Emissions Reduction (kgCO2e)
~	7	BETTER Valid Electricity Model
~	Ŧ	BETTER Valid Fuel Model

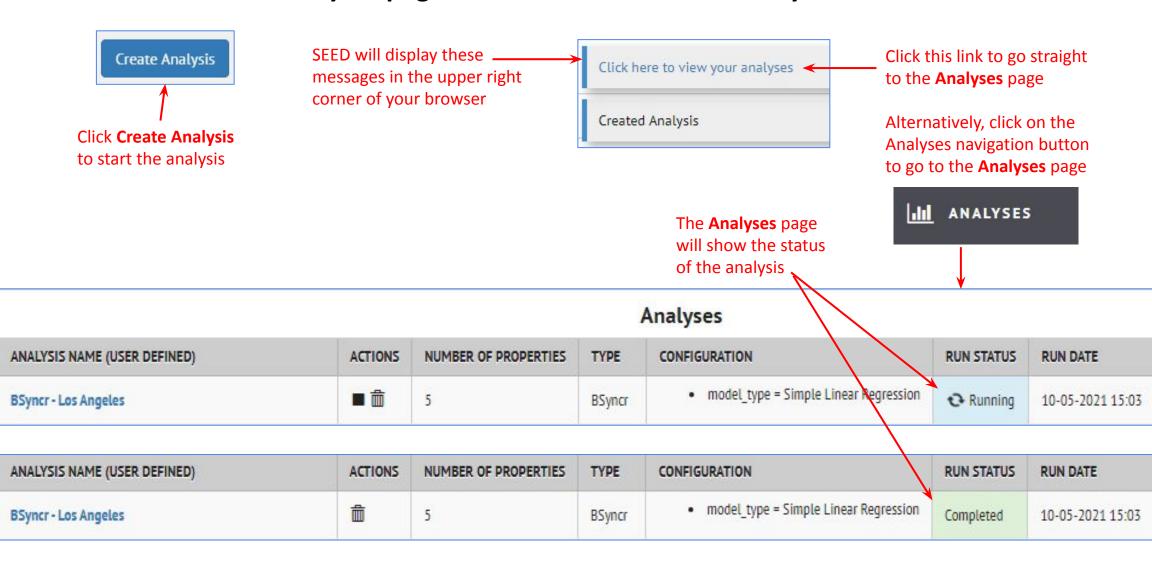
## **BSyncr: Setting up the Analysis**

- In the Property List, select the properties you want to perform an analysis on
- Select Run Analysis from the Actions menu choice
- Add an Analysis Name and set Type = BSyncr



## **BSyncr: Running the Analysis**

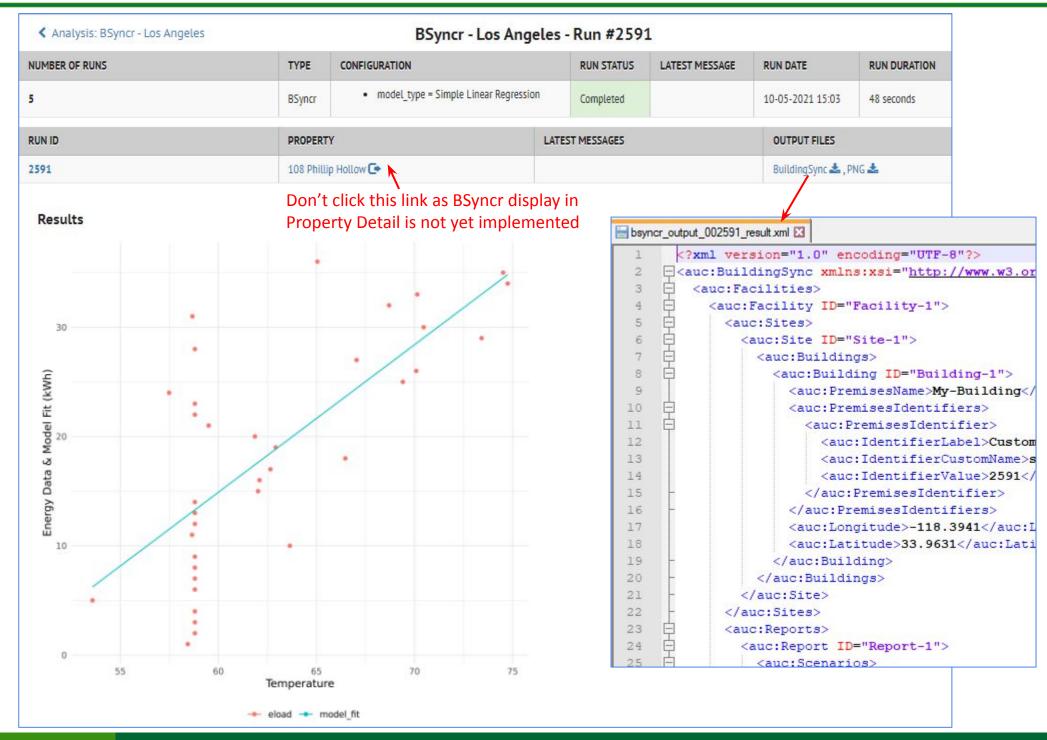
- Click the "Create Analysis" button to start the analysis
- Go to the Analyses page to see the status of the analysis



# **BSyncr: Viewing the Analysis Results**

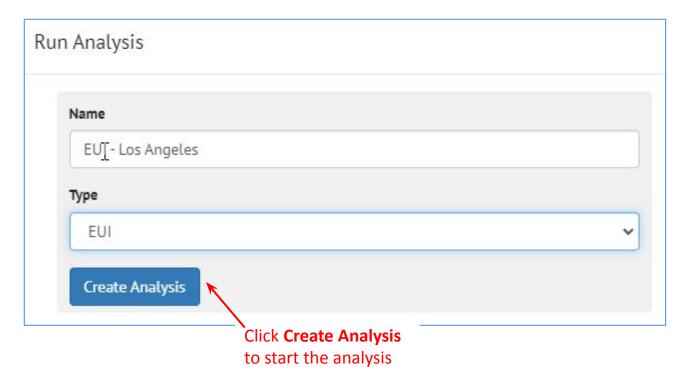
ANALYSIS NAME (USER DEFINED)		ACTIONS	NUMBER OF PROPERTIES	TYPE	CONFIG	URATION		RUN STATUS	RUN DATE	
BSyncr - Los Angeles		â	5	BSyncr	•	model_type = Simpl	e Linear Regression	Completed	10-05-2021 15:03	
Click on the <b>Analysis Name</b> link to view each analysis in the Portfolio										
< Analyses			Analysis: BSyno	cr - Los A	ngeles					
NUMBER OF RUNS	TYPE	CONFIGURA	TION	RUN	STATUS	LATEST MESSAGE	LATEST MESSAGE RUN DATE		RUN AUTHOR	
5	BSyncr	• mo	odel_type = Simple Linear Regression	Com	Completed 10-05-202		10-05-2021 15:03	48 seconds	LBNL 405, Robin	
RUN ID	PROPERT	Y			LATEST MESSAGES OUTP			UT FILES		
2590	790 Cryst	al Mission Suite	e 168 <b>C</b>				Building	Sync 🚣 , PNG 🚣		
2591	108 Philli	p Hollow 🕒					Building	Sync 🚣 , PNG 🚣		
2592	52618 Jan	nes Green Suite	e 761 <b>C</b>				Building	Sync 🚣 , PNG 🚣		
2593	0516 Amy	Plains Apt. 17	7 <b>C</b>				Building	Sync 🕹 , PNG 🕹		
2594	0401 Mid	dleton Ridge Si	uite 784 🕩				Building	Sync 🕹 , PNG 🕹		
Click <b>Run ID</b> to see the details for that building	see		perty link to ts in Inventory ail	the ar		sues with they will here	Click the <b>BuildingSync</b> download the	link to li file d	lick the <b>PNG</b> nk to ownload the lot graphic	

# **BSyncr: Viewing the Analysis Results**



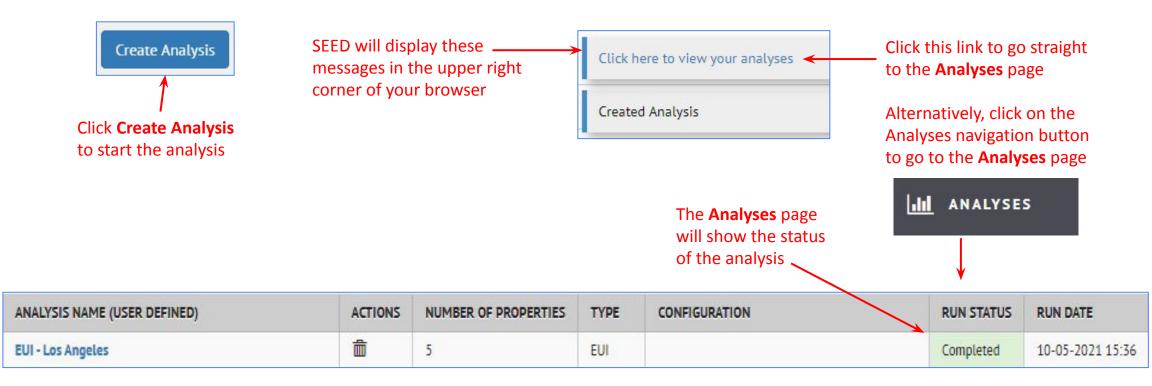
### **EUI: Setting up the Analysis**

- In the Property List, select the properties you want to perform an analysis on
- Select Run Analysis from the Actions menu choice
- Add an Analysis Name and set Type = EUI



### **EUI: Running the Analysis**

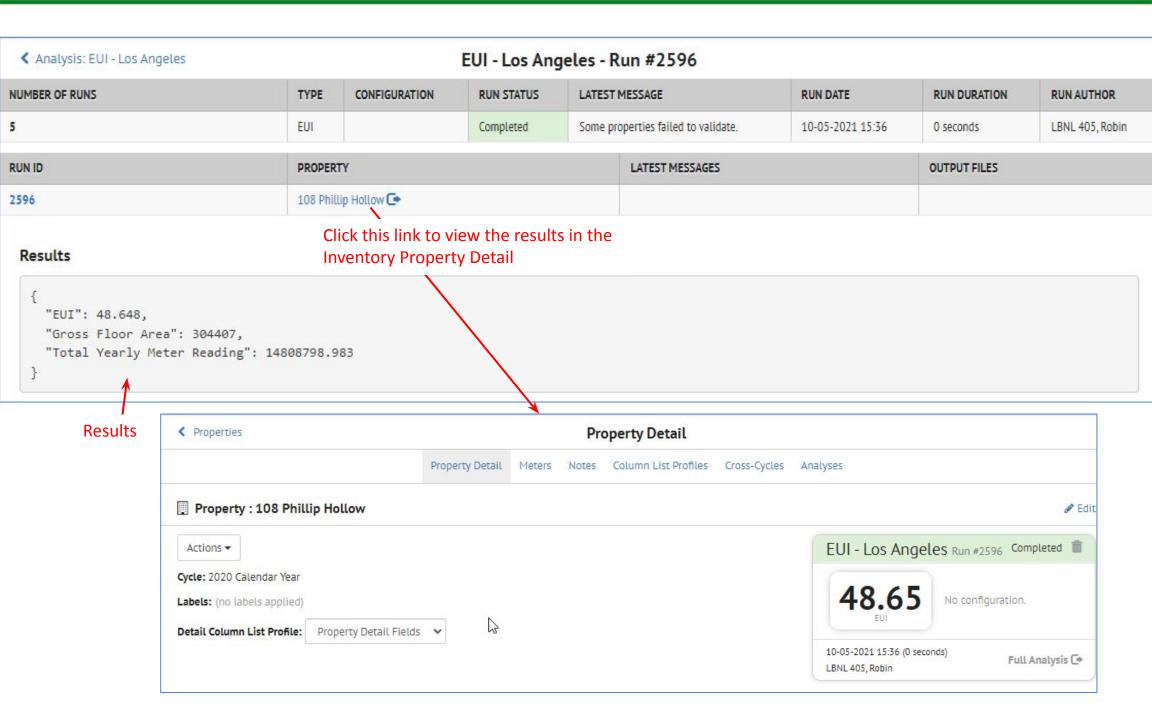
- Click the "Create Analysis" button to start the analysis
- Go to the Analyses page to see the status of the analysis



# **EUI: Viewing the Analysis Results**

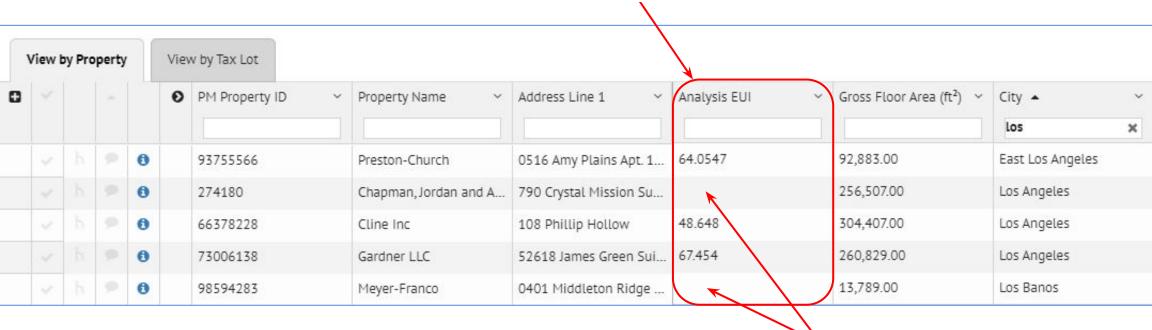
ANALYSIS NAME (USER DEFINED)		ACTIONS	NUMBER OF	PROPERTIES	TYPE	CONFIGURATION		RUN STATUS	RUN DATE	
EUI - Los Angeles		Î	5		EUI			Completed	10-05-2021 15:36	
Click on the <b>Analysis Name</b> linview each analysis in the Port										
Analyses Analysis: EUI - Los Angeles										
NUMBER OF RUNS	TYPE	CONFIGURATION		N STATUS	LATEST MESSAGE		RUN DATE	RUN DURATION	RUN AUTHOR	
5	EUI		Cor	npleted	Some properties failed to validate.		10-05-2021 15:36	0 seconds	LBNL 405, Robin	
RUN ID	PROPERT	PROPERTY			LATEST MESSAGES					
2595	790 Cryst	790 Crystal Mission Suite 168 🕒			Property view skipped (no linked electricity meters with 12 months of consecutive readings).					
2596	108 Phill	108 Phillip Hollow 🕩								
2597	52618 Jai	52618 James Green Suite 761 🕒								
2598	0516 Am	Plains Apt. 177	<b>(</b>							
2599	0401 Mid	0401 Middleton Ridge Suite 784			Property view skipped (no linked electricity meters with 12 months of consecutive readings).					
Click <b>Run ID</b> to see the details for that building See the results in <b>Invenional Property Detail</b>					the a	ere are issues with nalysis, they will splayed here	h			

## **EUI: Viewing the Analysis Results**



# **EUI: Property List - Viewing the Analysis Results**

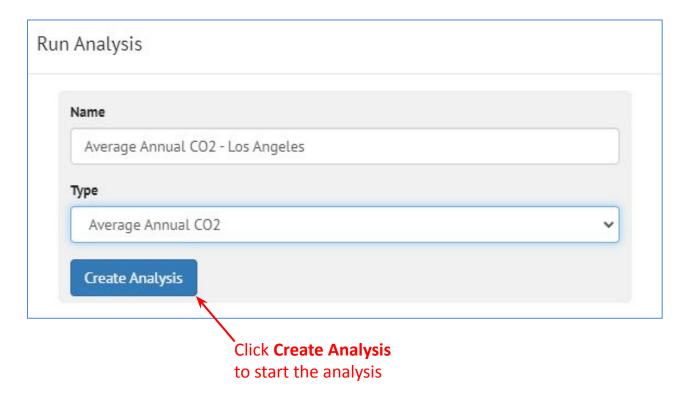
The field "Analysis EUI" contains the EUI results in the Inventory Property List View



These are the two records that didn't have electric meter data so the EUI could not be calculated

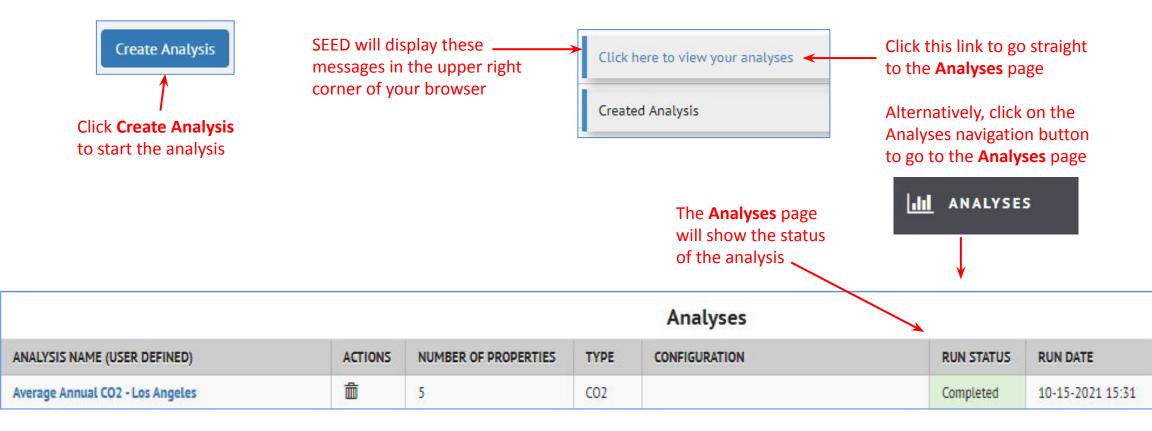
### **Average Annual CO2: Setting up the Analysis**

- In the Property List, select the properties you want to perform an analysis on
- Select Run Analysis from the Actions menu choice
- Add an Analysis Name and set Type = Average Annual CO2



## **Average Annual CO2: Running the Analysis**

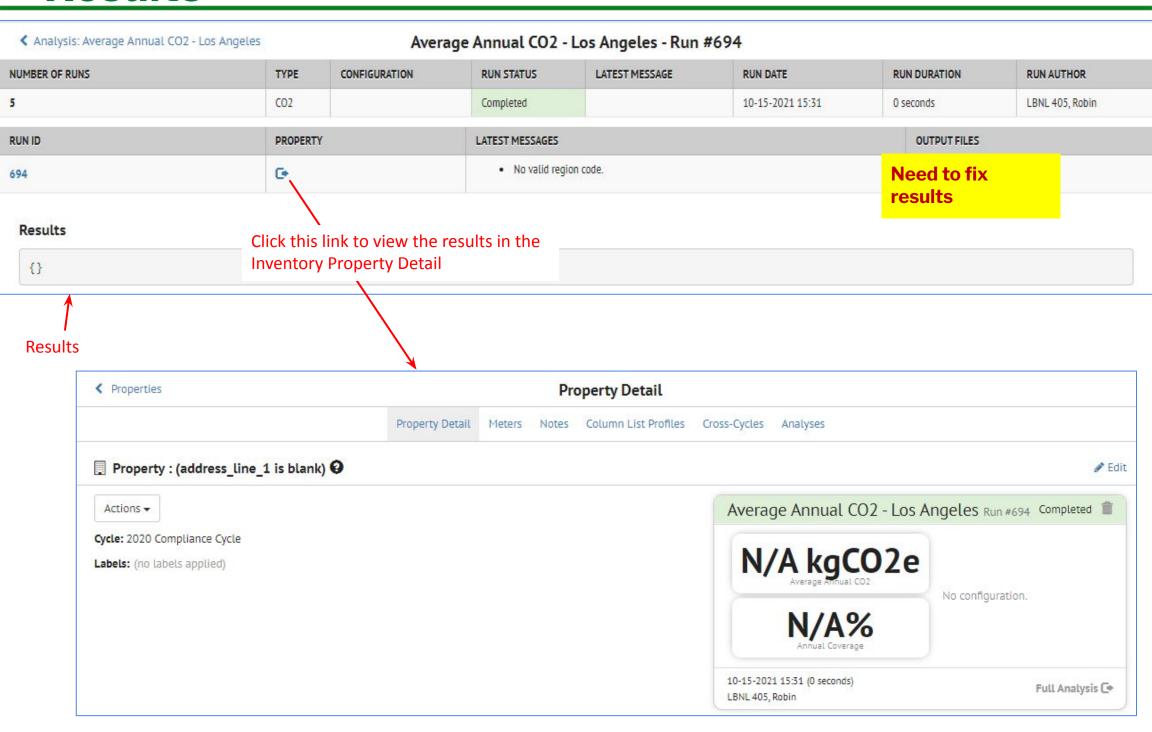
- Click the "Create Analysis" button to start the analysis
- Go to the Analyses page to see the status of the analysis



# **Average Annual CO2: Viewing the Analysis Results**

		Analyses									
ANALYSIS NAME (USER DEFINED)		ACTIONS	NUMBER OF PROPERTIES		TYPE	CONFIGURATION			RUN STATUS	RUN DATE	
Average Annual CO2 - Los Angeles		â	5		CO2				Completed	10-15-2021 15:31	
								Nee resu	d to fix Ilts		
✓ Analyses											
NUMBER OF RUNS	TYPE	CONFIGURA	TION	RUN STATUS	LA	TEST MESSAGE	RUN DATE	R	UN DURATION	RUN AUTHOR	
5	CO2			Completed			10-15-2021 15:31	0	seconds	LBNL 405, Robin	
RUN ID	PROPERT	PROPERTY		LATEST MESSAGES					OUTPUT FILES		
694	C+	C•		No valid region code.							
695	C+	G-		No valid region code.							
696	C+	C+		No valid region code.							
697	C+	G•		No valid region code.							
698	C+	G			No valid region code.						
Click <b>Run ID</b> to see the details for that building	se		<b>perty</b> link Its in <b>Inver</b> tail		the	here are issues we analysis, they we displayed here					

# **Average Annual CO2: Viewing the Analysis Results**



# **Average Annual CO2: Property List - Viewing the Analysis Results**

