

# MF HERCC Convening

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OCTOBER 30, 2018 - STOPWASTE

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## AGENDA

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- 1:00 Welcome, Introductions
- 1:15 EnergyPro Lite
- 1:45 Benchmarking
- 2:45 Break
- 3:00 Financing
- 4:15 Next Steps

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## Multifamily HERCC

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- Industry Collaborative since 2009
- 2013 Original Report and 2015 Update
  - Whole-Building Performance Approach, Energy Analysis Software, Performance Measurement, Tracking & Benchmarking, Streamline Program Participation Process, Increase Accessibility of Whole-Building Energy Use Data
- Audit & Combustion Appliance Safety Protocols
  - Field Data Collection Form, EnergyPro Lite Software, Tracking & Benchmarking



## EnergyPro Lite (LCAT)

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DEVELOPMENT UPDATE

FUTURE USE CASES AND MAINTENANCE

## EPL History/Overview

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- **EPL currently being used by BAMBE/LIWP**
- **Intent to make available for other programs**
- **Assessment of 3 tools**
  - EPL, EZ Retrofit, Asset Score

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## Development Update

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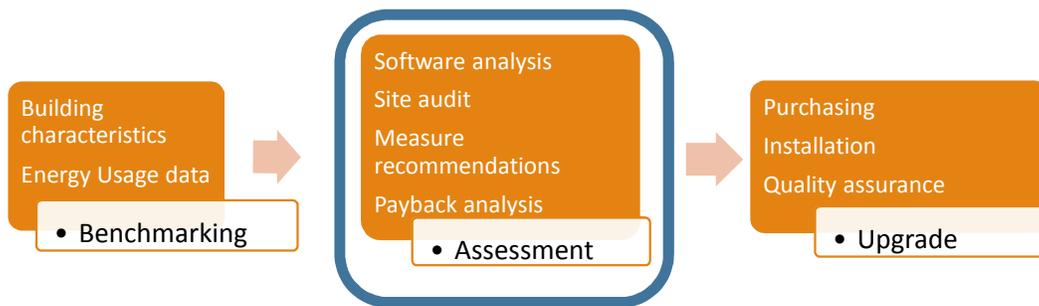
- **Near-term update specifications (2018)**
  - Internalizing external calculations
  - DHW: Central HPWH, demographics-based usage assumptions
- **Future updates**
  - Owner/manager-facing report
  - Outputs: CSV for SEED, Building XML
  - Electrification/fuel-switching, existing/proposed renewable energy systems
- **Potential**
  - Cost Wizard, estimated or actual
  - TOU pricing

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## EPL Use Cases

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1. Incentive Programs
2. Market-based Applications
3. Local Government Ordinances



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## Future Use Cases and Maintenance

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- **Maintaining credibility of savings estimates**
  - Ensuring consistent usage and inputs
- **Training and support**
- **Updates and maintenance**

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# Benchmarking

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CURRENT ISSUES

PROPERTY OWNER/MANAGER EDUCATIONAL MATERIALS

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## Early Compliance Benchmarking TA

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- **Building Attributes Variety**
  - Climate Zones
  - System Types
  - Building Vintage, # of Stories
  - Size (focus on 50K+ sq. ft.)
- **Completed EE projects (BayREN & LIWP)**
  - 12 months of data post-upgrade for validation
  - Projects ranging from 2015 to 2018

## How It Works

1. Create Portfolio Manager profile (~1 hour per property)
2. Request aggregated tenant data using PG&E benchmarking portal (1-5 hours per property)
3. PG&E “standard” data request for common area meters (1-5 hours per property)
4. Offline analysis (2-6+ hours per property)

## PG&E Portal

### ➤ Meter “Mapping” Updates

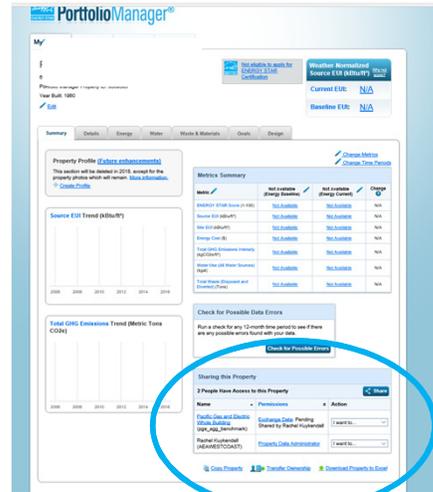
- Must enter service address exactly as it appears on bills (1-20+ service addresses per property)
- Usability improved by PG&E allowing meters to be “un-mapped” via email
- No longer limited to 50 meters at a time

The screenshot shows the PG&E Energy Star Portfolio Manager interface. At the top, there's a header with the PG&E logo and the slogan "Together, Building a Better California". Below the header, there are navigation links for "Manage Buildings" and "My Profile". The main content area is titled "Building Detail" and includes a "Remove Building" link. A red warning message states: "Tenant authorizations are required. Data cannot be shared for these customers until authorizations are received." Below this, another message says: "This building is not linked to your Energy Star Portfolio Manager account. A link must be established before customer data can be shared." The page also displays "Energy Star Portfolio Manager" details (User ID: 100128, Building ID: 313150005) and "Meter Status" (Gas: Not Linked, Electric: Not Linked). A blue circle highlights an orange "Update Mapping" button. Another blue circle highlights a link that says "View Meter ID: Gas: 0 Electric: 299". At the bottom, there is a table with columns for "Premises", "Gas Services", and "Electric Services".

Premises	Gas Services		Electric Services	
	No.	Auth Status	No.	Auth Status
	0	N/A	1	N/A
	0	N/A	1	N/A
	0	N/A	1	N/A
	0	N/A	1	N/A
	0	N/A	1	N/A
	0	N/A	1	N/A

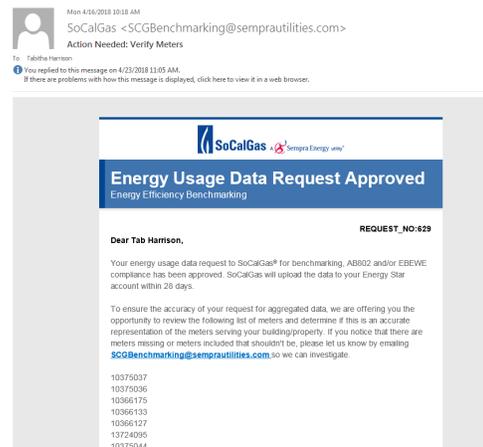
## PG&E Processes

- **Linking PG&E Portal to Portfolio Manager**
  - Use custom Building ID and User ID generated by PG&E portal



## Data Requests from Other Utilities

- **SoCal Gas**
  - Does not allow user to self-select meters
  - Difficult to navigate for properties with multiple service addresses
- **SCE**
  - Can self-select meters, but searching for meters under multiple service addresses (i.e., campus setting) is less flexible/fluid than PG&E
- **TID (Turlock Irrigation District)**
  - Initiated via email
  - Data provided via email



## Common Issues with Vetting Data

### Ongoing Issues

#### Difficult to confirm metering locations

- Common area versus aggregated tenant
- Especially challenging in campus settings

#### Qualitative info on equipment/building changes

- O&M issues, occupancy changes, decommissioned equipment brought back online

#### Inconsistent length of historic data

#### Lack of bill back-ups to cross-check questionable data

### New Issues

#### VNEM (Virtual Net Energy Metering)

- Effect on aggregated tenant data is largely unknown, should be watched for potential issues

#### Unit turnover causing taper of historic data

- Historic data only reported for currently active customer accounts

## High Unit Turnover = Faulty Data

Location: Sunnyvale, CA

Sq. ft.: 210,936

Units: 304

Aggregated data over 3 years at a property with high turnover



## Historic Taper

Meter Consumption ID	Start Date	End Date	Usage kWh	Cost	Estimated Value	Last Modified Date	Last Modified By
2005646923	5/1/2015	5/31/2015	1331.8	227.67	No	4/17/2018	pge_agg_benchmark
2005646933	6/1/2015	6/30/2015	2323.26	393.86	No	4/17/2018	pge_agg_benchmark
2005646924	7/1/2015	7/31/2015	3020.63	506.21	No	4/17/2018	pge_agg_benchmark
2005646939	8/1/2015	8/31/2015	11341.03	1918.32	No	4/17/2018	pge_agg_benchmark
2005646927	9/1/2015	9/30/2015	12649.92	2183.69	No	4/17/2018	pge_agg_benchmark
2005646932	10/1/2015	10/31/2015	13583.24	2331.35	No	4/17/2018	pge_agg_benchmark
2005646937	11/1/2015	11/30/2015	18032.47	3109.32	No	4/17/2018	pge_agg_benchmark
2005646917	12/1/2015	12/31/2015	24941.52	4362.63	No	4/17/2018	pge_agg_benchmark
2005646921	1/1/2016	1/31/2016	26852.41	4916.06	No	4/17/2018	pge_agg_benchmark

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## Potential Solution to Missing Historic Data

### SDGE

- Provides # of reporting meters per month
- Does not correct the data quality issue per se, but transparency allows user to calculate average consumption based on # of reporting meters

Go to Property List

Request Type: Aggregated Recurring  
Benchmarking Period: 1/1/2017 - 7/31/2018  
Building Status: Approved

Service Account	Energy Received - From	Energy Received - To	Usage Uploaded	Energy Type	Auth Required?	
*****6044	4/17/2017	7/31/2018		Electric	No	
*****6710	5/11/2017	7/31/2018		Electric	No	
*****1867	7/7/2017	7/31/2018		Electric	No	
*****7602	10/6/2017	7/31/2018		Electric	No	
*****2128	1/8/2018	7/31/2018		Electric	No	
*****0421	2/8/2018	7/31/2018		Electric	No	
*****1966	2/13/2018	7/31/2018		Electric	No	
*****4167	2/21/2018	7/31/2018		Electric	No	
*****4783	6/25/2018	7/31/2018		Electric	No	
*****3878	6/28/2018	7/31/2018		Electric	No	

Account 41 - 50 of 53

## Potential Solution to Missing Historic Data

Start Date	End Date	Usage kWh (thousand Watt-hours)	Number of Meters Reporting	Average kWh per meter	Estimated In-Unit Elect Use for All 58 Apts
1/1/2017	1/31/2017	14,285.6	40	357.14	20,714.25
2/1/2017	2/28/2017	11,280.0	40	282.00	16,356.09
3/1/2017	3/31/2017	11,710.7	40	292.77	16,980.65
4/1/2017	4/30/2017	11,681.8	40	292.05	16,938.62
5/1/2017	5/31/2017	12,617.4	41	307.74	17,849.03
6/1/2017	6/30/2017	12,177.9	42	289.95	16,817.20
7/1/2017	7/31/2017	14,556.9	42	346.59	20,102.39
8/1/2017	8/31/2017	13,970.5	43	324.90	18,843.96
9/1/2017	9/30/2017	13,082.4	43	304.24	17,646.03
10/1/2017	10/31/2017	13,780.7	43	320.48	18,588.00
11/1/2017	11/30/2017	13,344.2	44	303.28	17,590.11
12/1/2017	12/31/2017	15,881.1	44	360.94	20,934.26
1/1/2018	1/31/2018	15,541.9	44	353.23	20,487.13
2/1/2018	2/28/2018	14,475.7	45	321.68	18,657.61
3/1/2018	3/31/2018	13,710.2	48	285.63	16,566.53
4/1/2018	4/30/2018	10,963.1	48	228.40	13,247.19
5/1/2018	5/31/2018	10,960.2	48	228.34	13,243.62
6/1/2018	6/30/2018	10,271.1	48	213.98	12,411.02
7/1/2018	7/31/2018	13,938.4	50	278.77	16,168.56

## Educational Materials

- **Property owner/manager-facing “Why Benchmark?”**
- **CEC MF-specific benchmarking docs available December 2018**
  - Fact sheets, FAQ, Guide

### ENERGY BENCHMARKING FOR MULTIFAMILY BUILDINGS

Building energy benchmarking involves collecting basic building information (such as year built, construction type and occupancy type) and at least one year of monthly energy usage data to compare a building's energy use to similar buildings.



Benefits of building energy benchmarking  
Benchmarking provides building owners and managers with objective data on their property's energy performance. Better data helps owners and managers accurately value efficiency improvements. Studies show that more efficient buildings command higher lease rates and have increased asset value at resale.

### REQUIRED BY THE STATE OF CALIFORNIA

Benchmarking and Public Disclosure Law [AB 802]

Benchmarking basics for multifamily buildings

- Applies to buildings greater than 50,000 square feet with 17 or more residential utility accounts
- Requires building owner or manager to complete an annual report using ENERGY STAR Portfolio Manager, a free online tool provided by the U.S. EPA
- Reporting deadline is June 1, 2019 and each June 1 thereafter

*You can't manage what you don't measure*

## Discussion, roundtable questions

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- **Unit turnover and historic taper – how to solve these issues given IOUs have unique portals?**
- **How many other MF programs are offering BM services, and is there an opportunity for common data collection protocols?**
- **How do we make the ESPM scores more relevant/meaningful for MF, especially mixed-use buildings?**
  - Tenant and floor/area aggregation

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## Financing

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PROGRAM AND PRODUCT PRESENTATIONS  
ROUNDTABLE DISCUSSION

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## Programs/Products

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1. **BayREN Water Bill Savings Program (Frontier)**
2. **BayREN MF Financing Services (StopWaste)**
3. **On-Bill Financing (PG&E/TRC/SCG)**
4. **Affordable Multifamily Energy Efficiency Financing Pilot (CAEATFA)**
5. **National MF Financing Landscape (NRDC)**

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## National MF Financing Landscape

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- **Phil Henderson**
  - NRDC, Senior Financial Policy Specialist



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## Discussion

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- 1. Have you considered ways to streamline the underwriting process to minimize transaction costs?**
- 2. What requirements does your program have for estimating project energy savings? How have these requirements been received by the market?**
- 3. How is your program marketed?**
- 4. Can your program be used to help cover construction costs?**

## Next Steps

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BIKE RACK

NEXT MF-HERCC CONVENING

Multifamily Home Energy Retrofit Coordinating Committee Convening  
10.30.18 @ StopWaste

For more information, contact:

**Ben Cooper**

[bcooper@stopwaste.org](mailto:bcooper@stopwaste.org)

(510) 891-6511

**Candis Mary-Dauphin**

[cmary-dauphin@stopwaste.org](mailto:cmary-dauphin@stopwaste.org)

(510) 891-6553

