



**SF Environment**

**Our home. Our city. Our planet.**

A Department of the City and County of San Francisco

# San Francisco Existing Commercial Buildings Ordinance

Results and Lessons

Barry Hooper

SEEC 2018



# SF ECBO at a Glance



## **Applies to:**

- Non-Residential Buildings with
- 10,000+ sq ft of conditioned space

## **Requirements:**

- Benchmark Annually with Portfolio Manager
- Energy Audit or RCx every 5 years (ASHRAE I/II)

**Adopted: 2011**



# SF ECBO



Applies to **1,648** private sector buildings and **470** public sector buildings  
Publicly disclosed via [www.DataSF.org](http://www.DataSF.org)

**Existing Commercial Buildings Energy Performance Ordinance Report**  
Data updated 8/7/2017. The Existing Commercial Buildings Energy Performance Ordinance (Environment Code)

Find in this Dataset

Manage More Views Filter Visualize Export Discuss Embed About

Parcel(s)	Building Name	Building Address	Postal Code	Full Address	Floor Area	Property Type - Self Selected	PIM Link
1	945 FRONT ST	945 FRONT ST	94111	945 FRONT ST	22,225	Office	<a href="http://propertymap.sfplanning.org">http://propertymap.sfplanning.org</a>
2	2225 PALOU AVE	2225 PALOU AVE	94124	2225 PALOU AVE	47,880	Non-Refrigerated Warehouse	<a href="http://propertymap.sfplanning.org">http://propertymap.sfplanning.org</a>
3	2345 Harrison	2345 HARRISON ST	94110	2345 HARRISON ST	53,000	Other	<a href="http://propertymap.sfplanning.org">http://propertymap.sfplanning.org</a>
4	589 HOWARD ST	589 HOWARD ST	94105	589 HOWARD ST	15,600	Office	<a href="http://propertymap.sfplanning.org">http://propertymap.sfplanning.org</a>
5	888 Post Street	888 POST ST	94109	888 POST ST	32,131	Mixed Use Property	<a href="http://propertymap.sfplanning.org">http://propertymap.sfplanning.org</a>
6	550 INDIANA ST	500 INDIANA ST	94107	500 INDIANA ST	157,094	Non-Refrigerated Warehouse	<a href="http://propertymap.sfplanning.org">http://propertymap.sfplanning.org</a>
7	Pier 19	19 Pier	94111	19 Pier	97,641	Non-Refrigerated Warehouse	<a href="http://propertymap.sfplanning.org">http://propertymap.sfplanning.org</a>
8	45 Pier - Shed B	45 Pier - Shed B	94133	45 Pier	71,833	Other	<a href="http://propertymap.sfplanning.org">http://propertymap.sfplanning.org</a>
9	Apparel Dorman 4-90	50 Dorman Ave	94124	50 Dorman Ave	50,422	Non-Refrigerated Warehouse	<a href="http://propertymap.sfplanning.org">http://propertymap.sfplanning.org</a>
10	Barneveld Dorman 1-55	1-55 Dorman Ave	94124	1 55 Dorman Ave	37,550	Non-Refrigerated Warehouse	<a href="http://propertymap.sfplanning.org">http://propertymap.sfplanning.org</a>
11	1019 CLEMENT ST	1019 CLEMENT ST	94118	1019 CLEMENT ST	14,500	Urgent Care/Clinic/Other Outpatie	<a href="http://propertymap.sfplanning.org">http://propertymap.sfplanning.org</a>
12	841 HOWARD ST	841 HOWARD ST	94103	841 HOWARD ST	15,277	Other - Entertainment/Public Asse	<a href="http://propertymap.sfplanning.org">http://propertymap.sfplanning.org</a>
13	999 Van Ness Ave	945 VAN NESS AVE	94109	945 VAN NESS AVE	82,370	Automobile Dealership	<a href="http://propertymap.sfplanning.org">http://propertymap.sfplanning.org</a>
14	690 POTRERO AVE	690 POTRERO AVE	94110	690 POTRERO AVE	14,000	Office	<a href="http://propertymap.sfplanning.org">http://propertymap.sfplanning.org</a>
15	1009 STOCKTON ST	1009 STOCKTON ST	94108	1009 STOCKTON ST	15,000	Worship Facility	<a href="http://propertymap.sfplanning.org">http://propertymap.sfplanning.org</a>
16	08039-Sf-evans	2090 Evans St.	94124	2090 Evans St	119,900	Non-Refrigerated Warehouse	<a href="http://propertymap.sfplanning.org">http://propertymap.sfplanning.org</a>
17	475 6TH ST	475 6TH ST	94107	475 6TH ST	14,400	Distribution Center	<a href="http://propertymap.sfplanning.org">http://propertymap.sfplanning.org</a>
18	Pier 48 - Shed A	48 Pier - Shed A	94158	48 Pier	83,852	Other	<a href="http://propertymap.sfplanning.org">http://propertymap.sfplanning.org</a>

# Municipal Facilities – Results



2011 ENERGY BENCHMARKING REPORT

San Francisco

2012 ENERGY BENCHMARKING REPORT

San Francisco Municipal Buildings

October 2011

2013 ENERGY BENCHMARKING REPORT

San Francisco Municipal Buildings

September 2012

2014 ENERGY BENCHMARKING REPORT

San Francisco Municipal Buildings

December 2013

2015 ENERGY BENCHMARKING REPORT

San Francisco Municipal Buildings

October 2014

2016 ENERGY BENCHMARKING REPORT

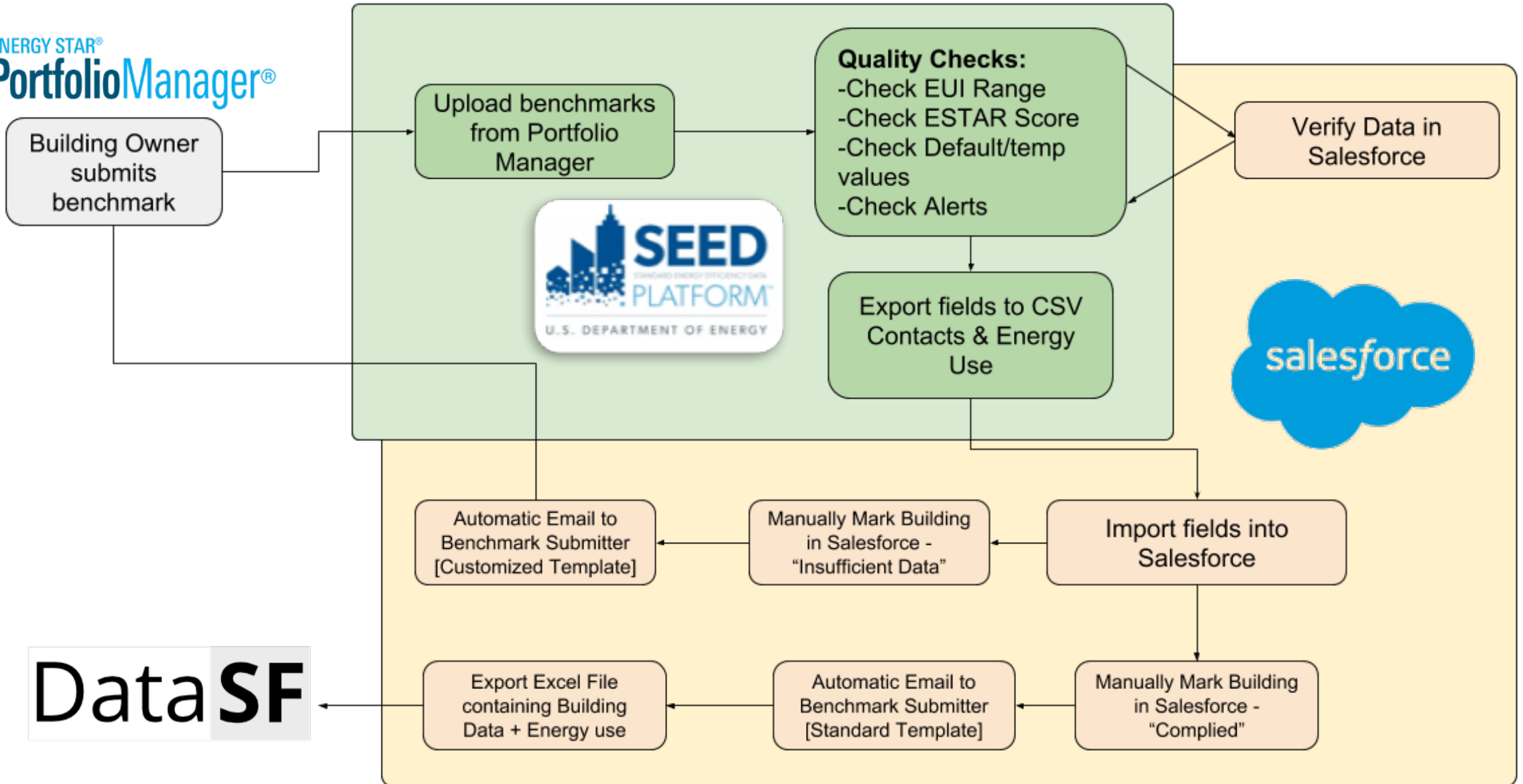
San Francisco Municipal Buildings

↓ 26%

CO<sub>2</sub>e



# Lesson: Efficient Administration



# Lesson: Data Validation is Key



IN GOD WE TRUST



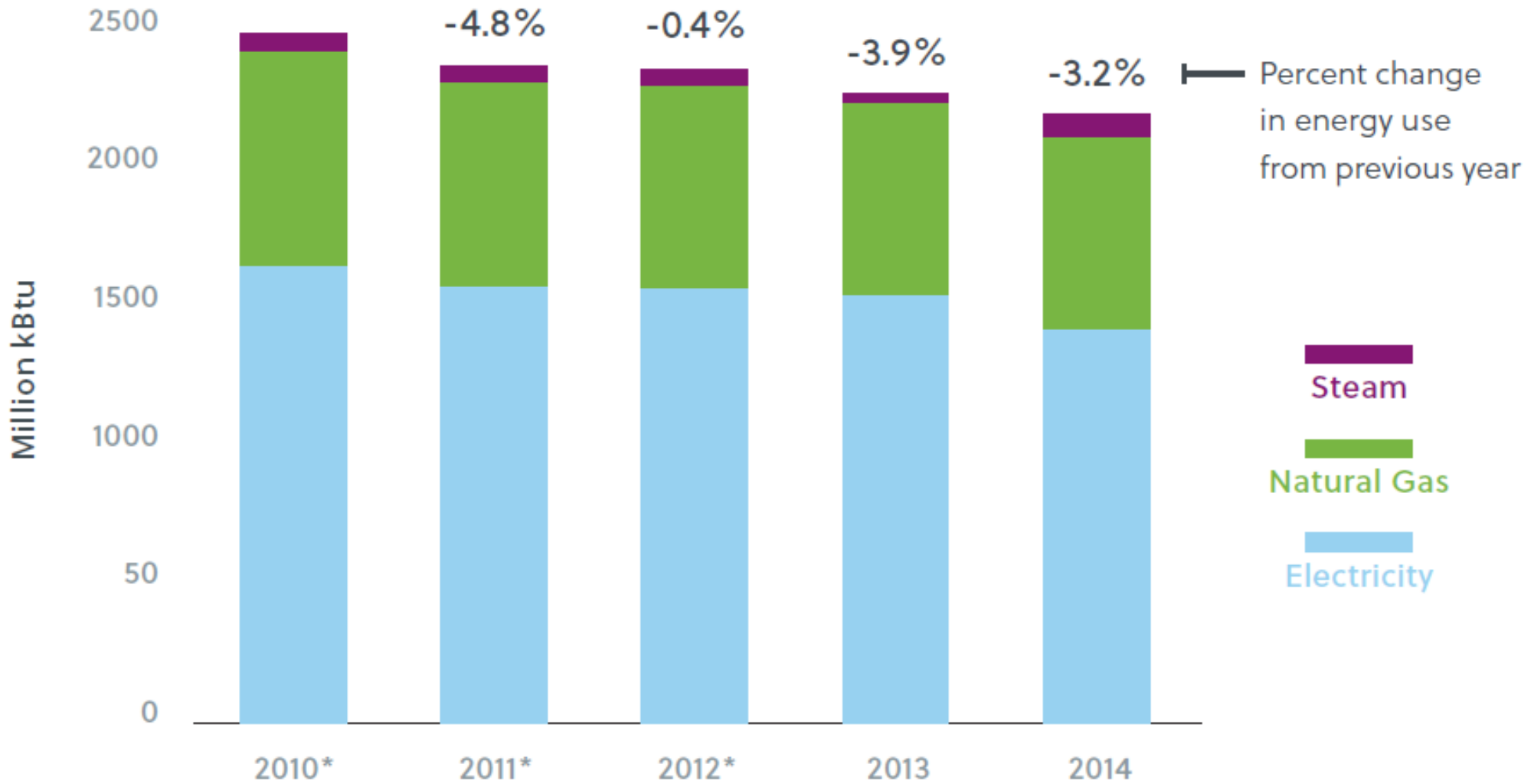
All Others Must Provide Proof

# Does Benchmarking Save Energy?

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# San Francisco - Private Sector Office: 3% Annual Average Reduction For First 5 Years





# Are results similar elsewhere?



- Analyzed NCREIF data
  - Confidential voluntary disclosure
- Compared four cities requiring benchmarking vs. others
- 3% improvement in energy cost over 3 years, after accounting for location, weather, etc.

DISCUSSION PAPER

April 2015 ■ RFF DP 15-12

## Does Information Provision Shrink the Energy Efficiency Gap?

*A Cross-City Comparison of Commercial Building Benchmarking and Disclosure Laws*

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Karen Palmer and Margaret Walls



# How Can Benchmarking Inform Action?

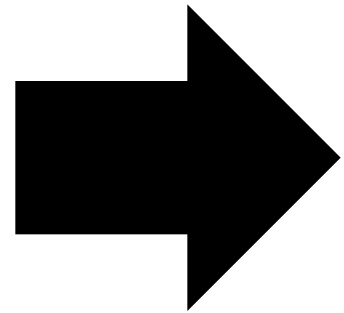


- Feedback to building decisionmakers
- Target energy efficiency outreach
- Energy modeling to identify and capture efficiency potential

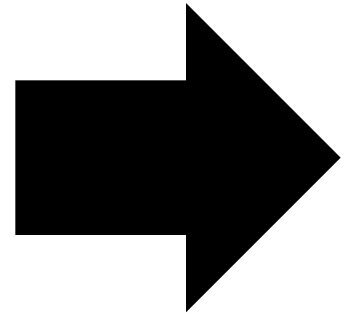
# Feedback to Building Decisionmakers

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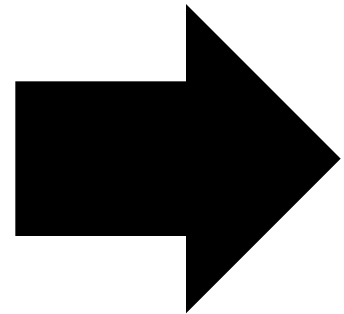




**Complied**



**Not Complied**




**Public Disclosure**

# Score Card



## BENCHMARKING PROFILE

 **Hotel Zetta**  
55 5TH ST  
San Francisco CA, 94103

Building type: hotel  
Floor area: 105,905 ft<sup>2</sup>  
Parcel Number: 2345/001  
Year Built: 1935

### Compliance status:

2016: **Complied**

2015: **Complied**

2014 Energy Audit: **Complied**

[BENCHMARK NOW](#)

2017 BENCHMARKS ARE DUE  
APRIL 1, 2018

[What is the Existing Commercial Buildings Ordinance?](#)

[How to submit benchmarking data](#)

## Hotel Zetta

### LOCAL RANKING

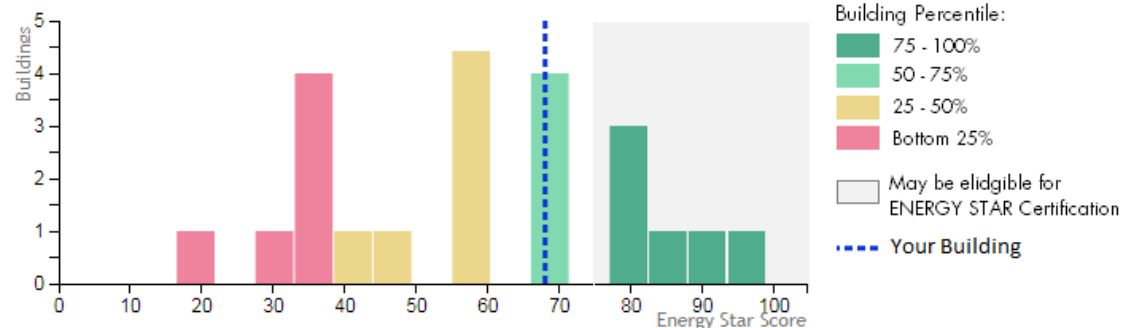
**#8**  
out of 23  
Similar Size Hotels 

Based on the ENERGY STAR score and Energy Use Intensity reported in 2016, energy use at Hotel Zetta is ranked 8 out of 23 hotels between 100,000-250,000 square feet in gross floor area.

### LATEST ENERGY STAR SCORE FOR HOTEL BUILDINGS 100,000-250,000 SQUARE FEET IN SAN FRANCISCO

### ENERGY STAR Score

**68**  
out of 100 



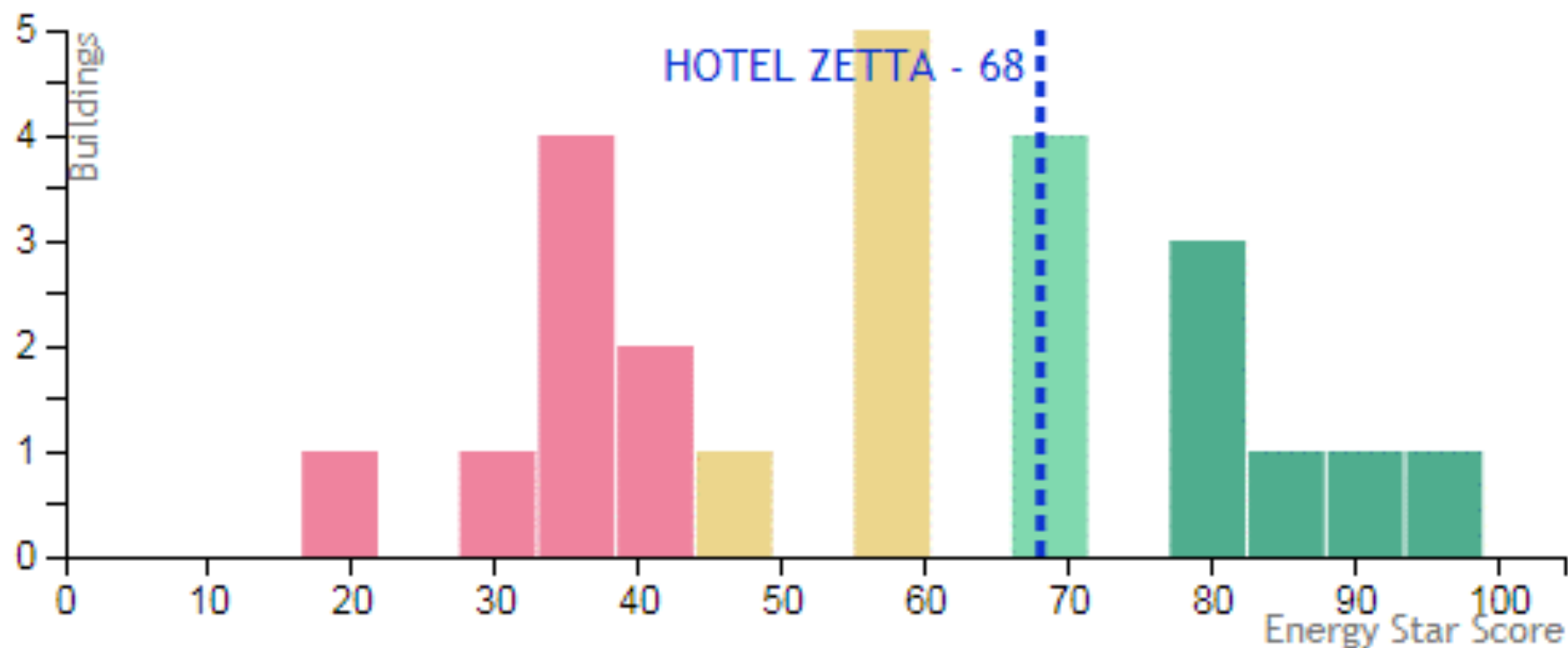
### ABOUT THE ENERGY STAR SCORE

- a rating between 1-100 that summarizes at a glance how a building is performing compared to similar buildings nationwide, after accounting for local climate. The higher the score, the better; buildings with a score of 75 or better may qualify for ENERGY STAR certification as top performers. The score uses the information you entered about your building, including: size, location, occupancy, number of computers, etc.

[San Francisco Energy Watch can help you save money, save energy, and improve your ENERGY STAR score](#)



## LATEST ENERGY STAR SCORE FOR HOTEL BUILDINGS IN SAN FRANCISCO 100,000-250,000 SQUARE FEET





## Your Hotel Ranks

**#8**

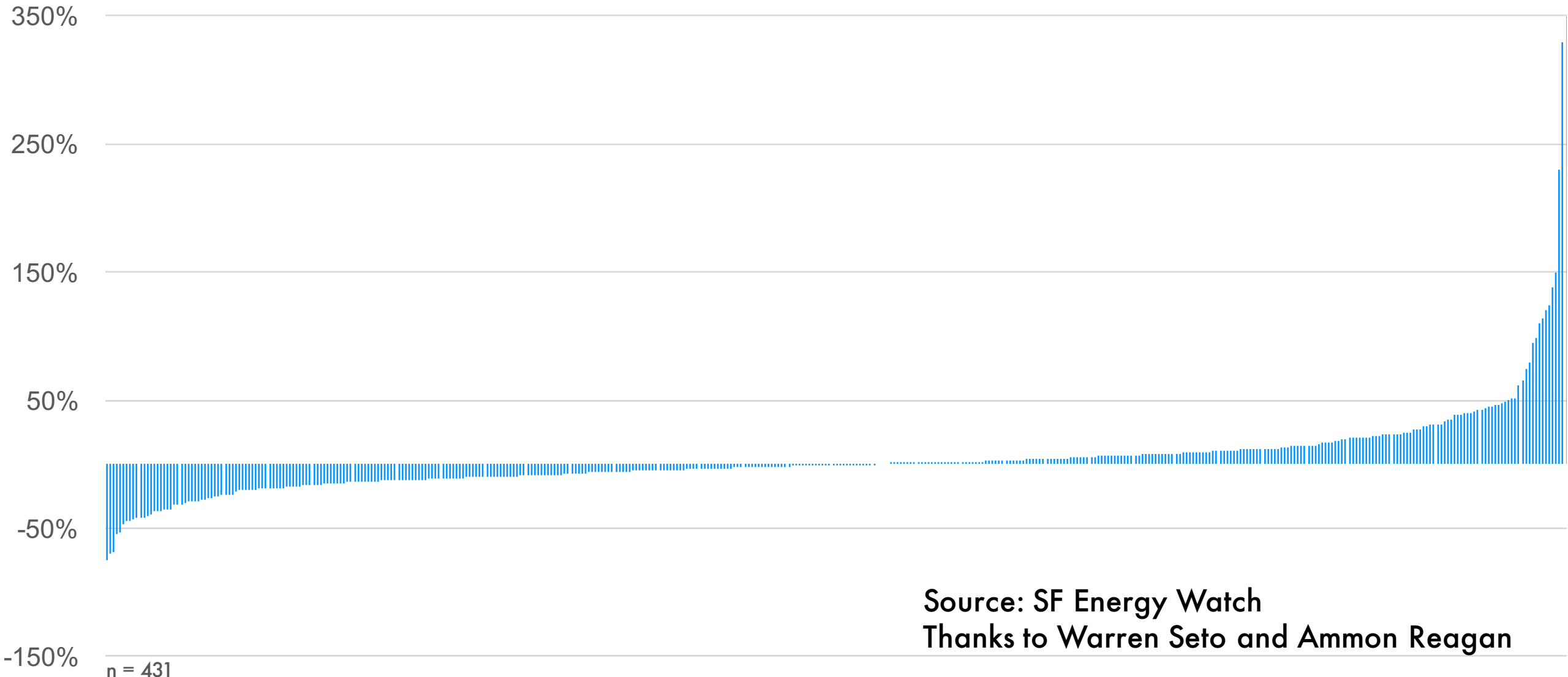
out of 23  
Similar Sized Hotels

# Targeting Outreach





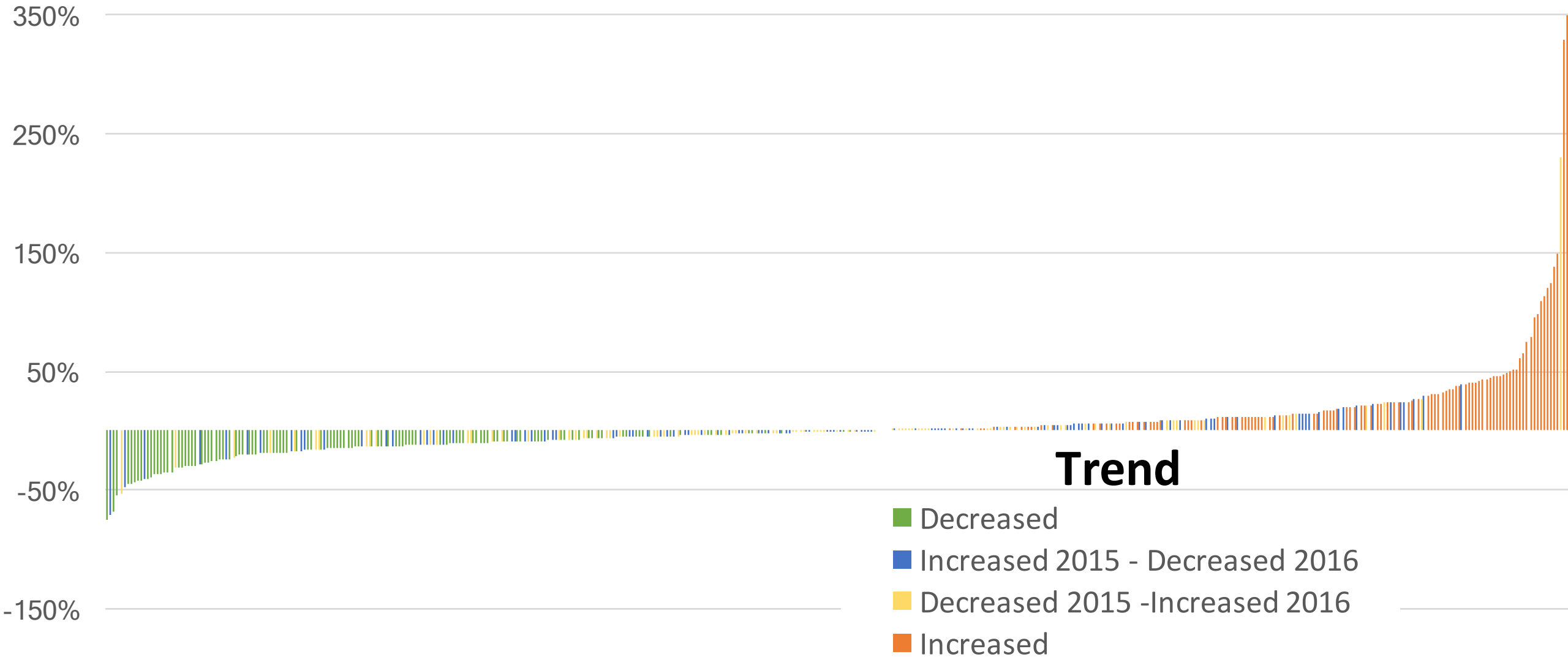
# San Francisco Office Building Energy Use 2014 to 2016



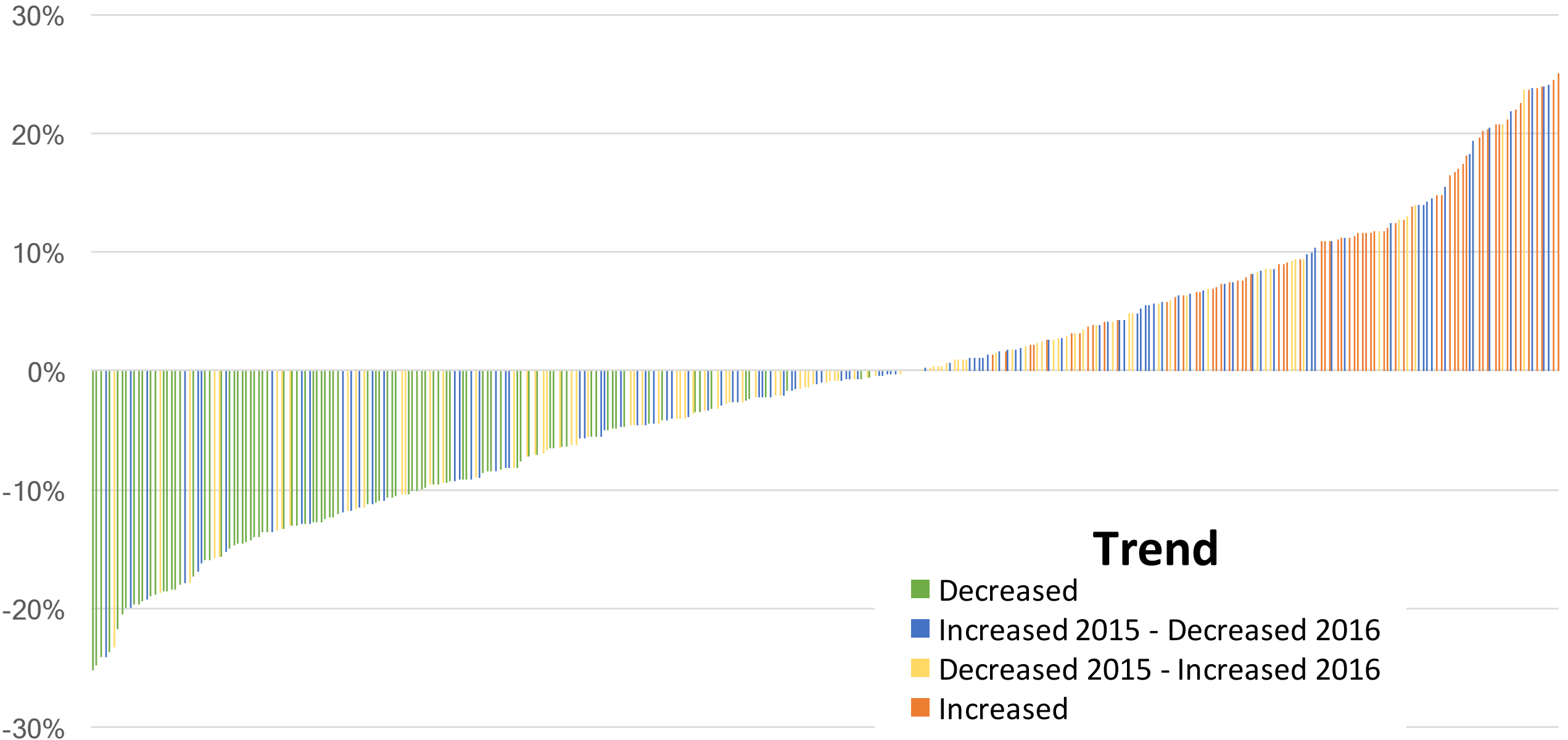
Source: SF Energy Watch  
Thanks to Warren Seto and Ammon Reagan

n = 431

# San Francisco Office Building Energy Use 2014 to 2016



# San Francisco Office Building Energy Use 2014 to 2016



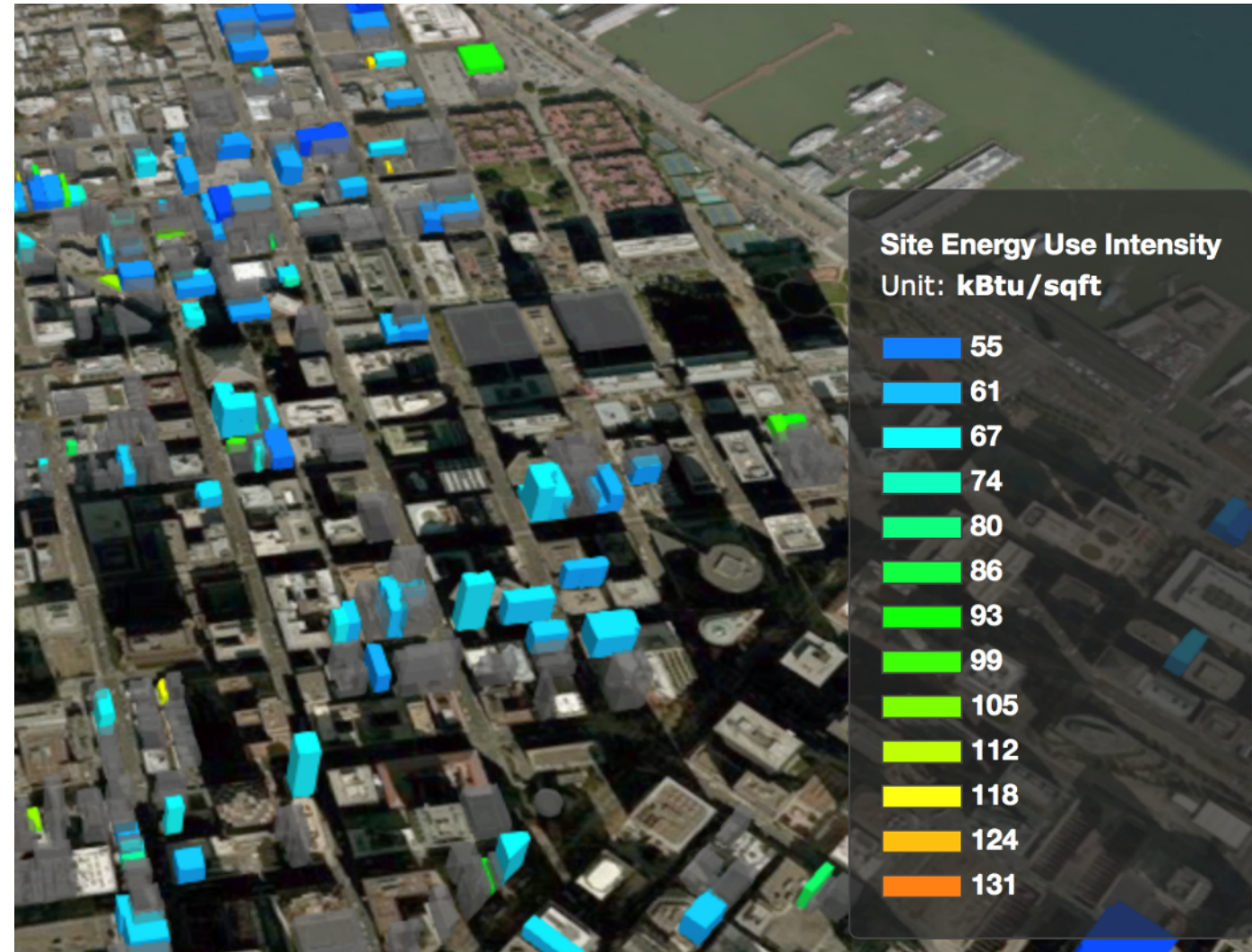
# Identifying and Capturing Efficiency Potential



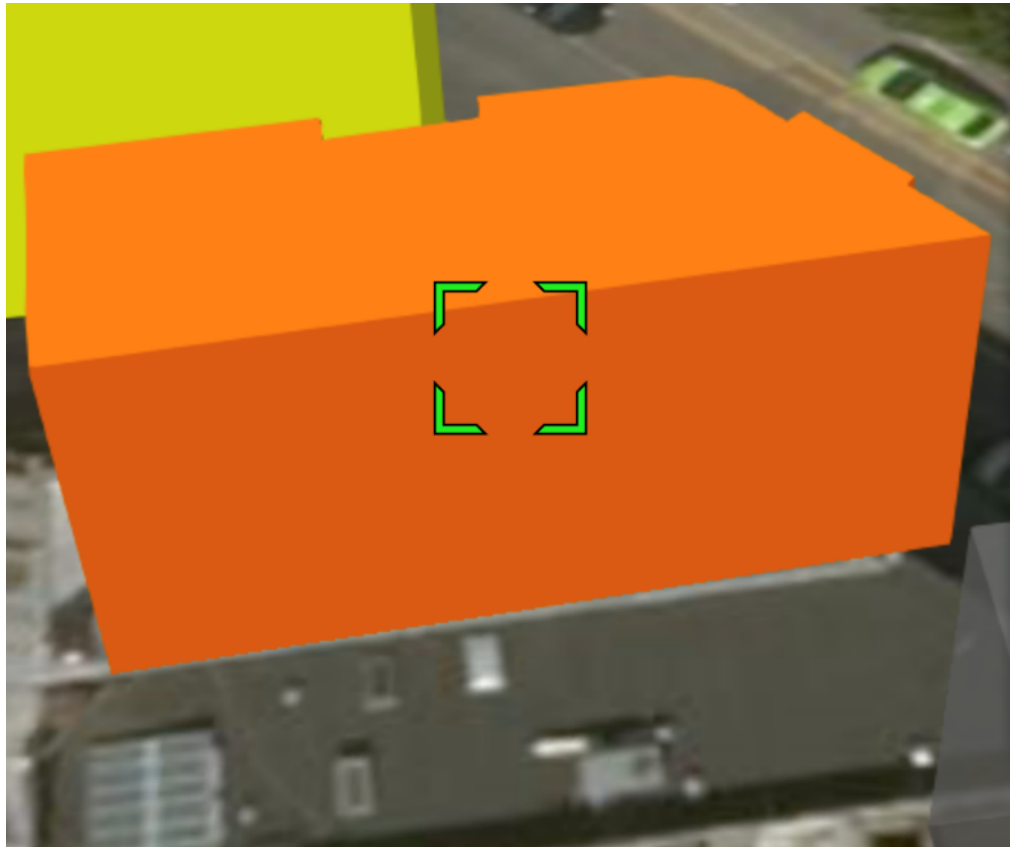
# BayREN Integrated Commercial Retrofits (BRICR)



- Regional dataset
  - Iterative
  - Open source
- Energy model for each building
  - Identify potential improvement
  - Target prospects
- Propose retrofits
- Streamline financing
- Measure realized energy savings



# BayREN Integrated Commercial Retrofits (BRICR)



## Retrofit Simulated Result for ECM Package 8

ECMs applicable for this building  
- Add Economizer

Site Energy Use Intensity Reduction	9 kBtu/sqft
Source Energy Use Intensity Reduction	29 kBtu/sqft
CO2 Emission Intensity Reduction	11 lbs/m <sup>2</sup>
Peak Electricity Load Intensity Reduction	0 W/m <sup>2</sup>
Electricity Use Intensity Reduction	9 kBtu/sqft
Natural Gas Use Intensity Reduction	0 kBtu/sqft
Electricity Cost Saving	1141 \$
Natural Gas Cost Saving	-0 \$
Energy Cost Saving	1141 \$
Investment Cost	6291 \$



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