

Energy Disclosure Laws and the Case for Green Buildings

AIR CRE

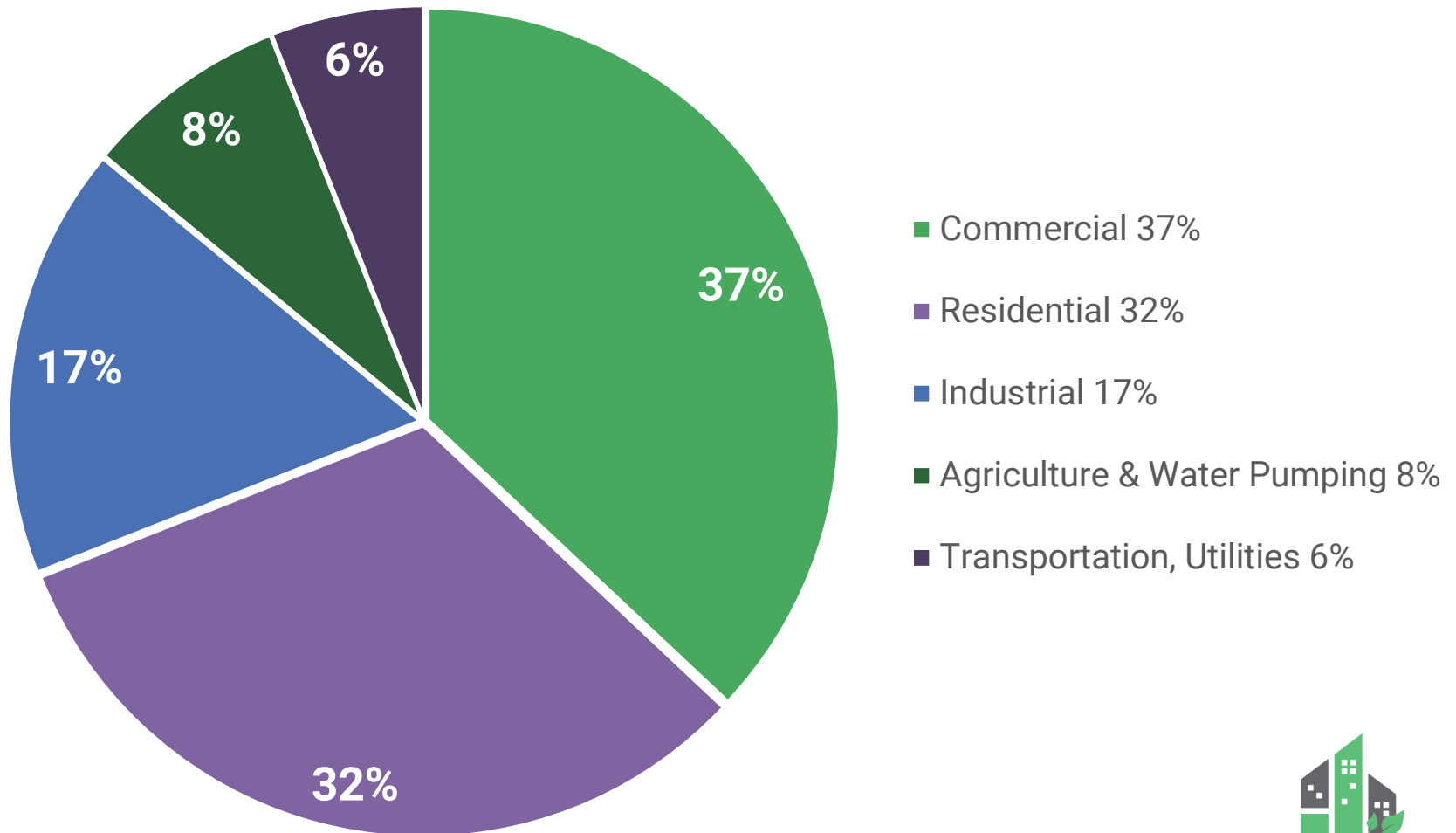
January 14, 2021



GREEN ECONOMY

Why the Focus on Commercial Buildings?

CA Electricity Consumption by Sector



Data from CALMATTERS



Energy Star Benchmarking

The Means to Assess Efficiency

Benchmarking provides a 1 – 100 Energy Star score

- Helps understand how a building's energy consumption measures up against similar buildings nationwide
- 100 being the most efficient
- 50 represents a median score
- 75+ allows for Energy Star Certification – A Top Performer



Benchmarking Information Requirements



Energy Usage: kWh/Therms/Solar

Always for the previous calendar year:

Requires 12 consecutive months of energy and water usage



(Tenant) Utility Authorization

Approval by the utility customer:

Commercial: Less than 3 Active Utility accounts (none of them residential)

OR

Residential: Less than 5 Active Utility accounts, one at least residential.

Utilities download "aggregate" data.



Building Use Data Includes

Differs by Property use type:

Sq.Ft and age

Spaces%: Air Conditioned/
Parking/ Irrigated

Number of employees and computers

Hours of operation



Energy Star Benchmarking Metrics

- Valuable comparative data is provided
- Site Energy Use Intensity (EUI)
- Source EUI
- GHG Emissions
- Comparative Data:** Current performance over previous years/baseline and against National Median of similar property types.
- Energy Star Certification:** For buildings with a score over 75



ENERGY STAR® Progress & Goals Report

26

ENERGY STAR®
Score¹

Primary Property Type: Non-Refrigerated Warehouse
Gross Floor Area (ft²): 119,600
Built: 1978

For Year Ending: December 31, 2019
Date Generated: January 13, 2021

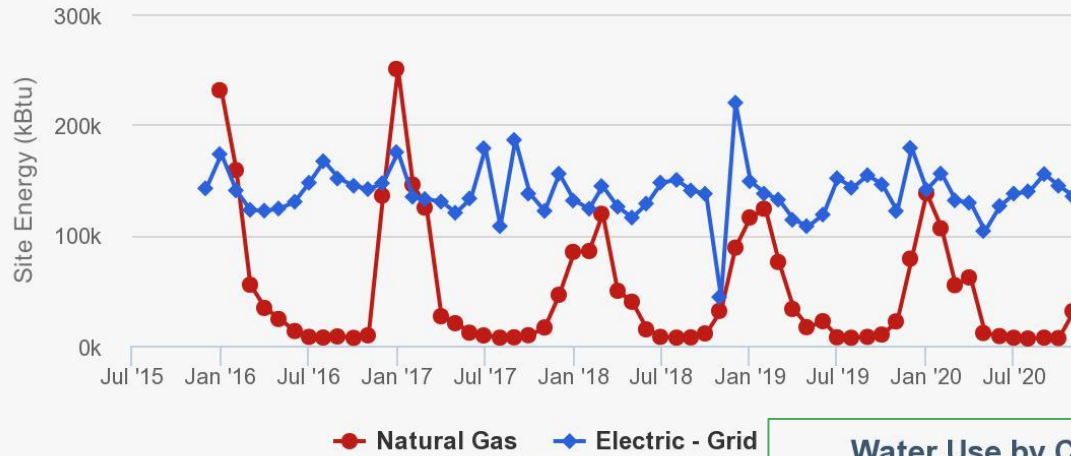
I. The ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

Performance Comparison

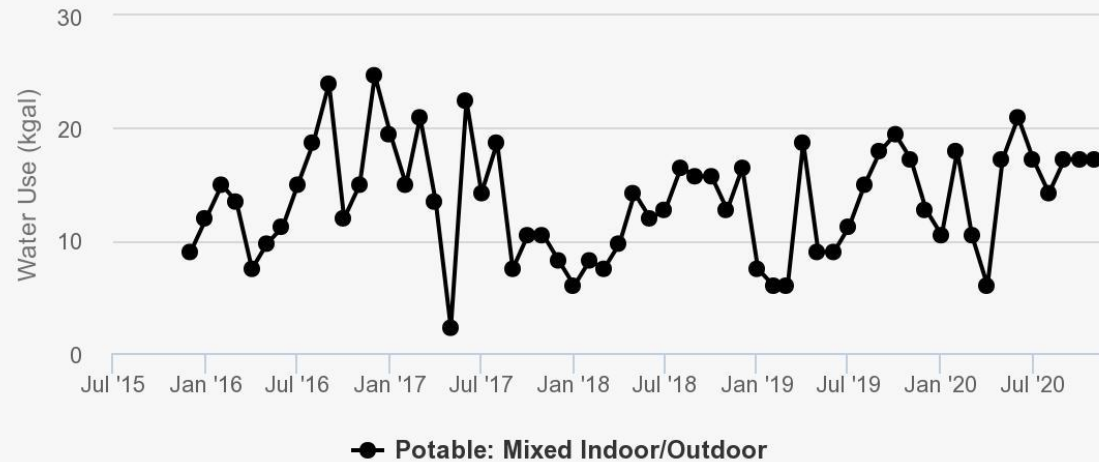
	Progress			Performance Goals		
	Baseline (Ending Date 12/31/2018)	(Ending Date 12/31/2019)	% Change	Property's Target	National Median	ENERGY STAR Score of 75
ENERGY STAR Score	26	26		36	50	75
Energy						
Site EUI (kBtu/ft ²)	18	18.2	0.9	15.3	12	7.3
Source EUI (kBtu/ft ²)	42.5	43.3	1.9	36.1	28.5	17.4
Energy Cost (\$)	N/A	N/A	N/A	N/A	N/A	N/A
Energy Cost Intensity (¢)	N/A	N/A	N/A	N/A	N/A	N/A
Greenhouse Gas Emissions						
Total GHG Emissions (Metric Tons CO ₂ e)	135.7	137.3	1.2	115.4	90.5	55
Total GHG Emissions Intensity (kgCO ₂ e/ft ²)	1.1	1.1	1.2	1	0.8	0.5
Water						
All Water Use (kgal)	147.4	149.6	1.5	*	*	*
Indoor Water Use (kgal)	N/A	N/A	N/A	*	*	*
Indoor Water Use Intensity (gal/ft ²)	N/A	N/A	N/A	*	*	*

Comparative Period Graphics Provide Insight

Energy Use by Calendar Month (Not Weather Normalized) for

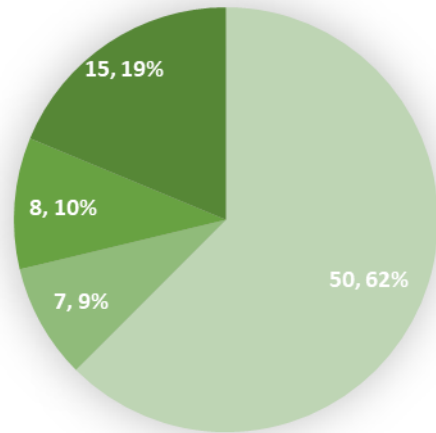


Water Use by Calendar Month (Not Weather Normalized) for



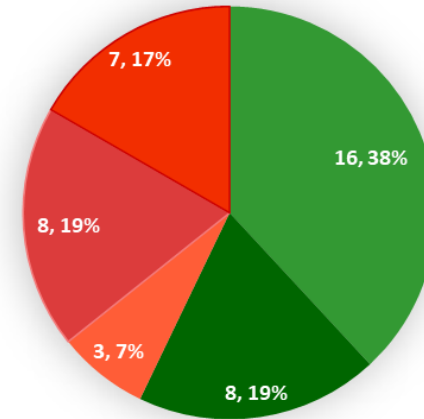
Benchmarking Data Provides Building Portfolio Analysis

Portfolio Standings



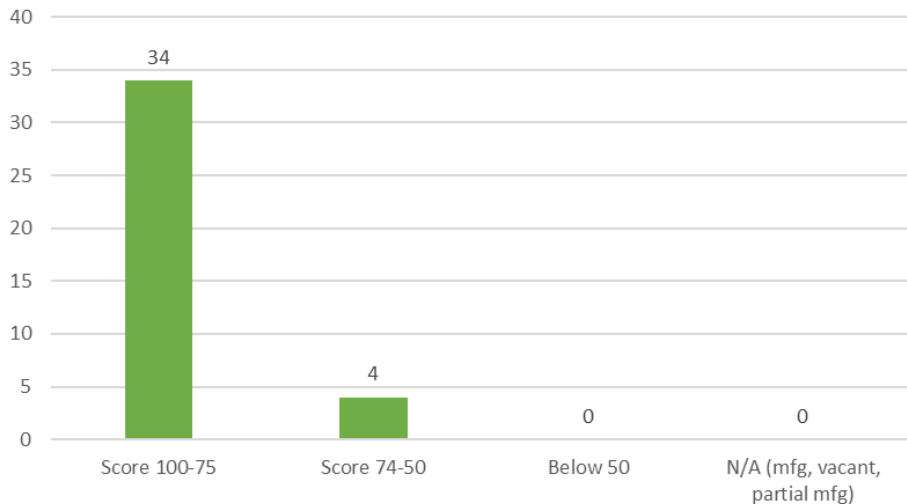
■ Score 100-75 ■ Score 74-50 ■ Below 50 ■ N/A (mfg, vacant, partial mfg)

EBEWE Building Standings - Out of 42 Finished

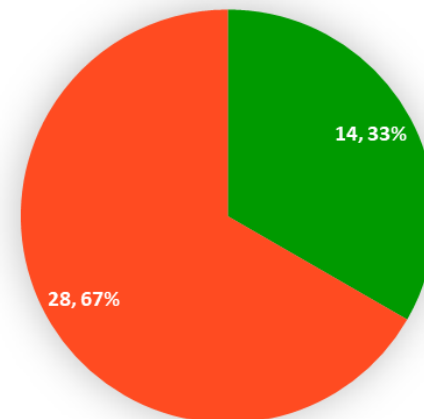


■ Score 100-75 ■ Score 74-50 ■ Below 50 ■ N/A and Energy Exemption Met ■ N/A and no Energy Exemption Met

AB 802 Buildings Standing - Out of 38 Finished



EBEWE Water Exemption Status



■ Meeting Water Exemption ■ Not Meeting Water Exemption



California State

Assembly Bill 802



Replaces AB 1103

Energy Benchmarking & Disclosure Program requires owners of large commercial and multifamily buildings to report energy use to the California Energy Commission (CEC)

by **June 1, annually**

Energy Disclosure involves Benchmarking the energy consumption of the building

AB 802 Requirements

WHO:

Owners of commercial buildings 50k+ Sq.Ft, no residential meters

Owners of multi-family buildings 50k+ Sq.Ft, 17+ active residential meters

WHERE:

California statewide. Notices have not been sent by the CEC. Complying with local benchmarking disclosure laws, will automatically meet AB 802

WHAT:

Complete ENERGY STAR® benchmarking report with energy (electric/gas/solar) use from previous 12-month calendar year

WHEN:

Submit report to the CEC by June 1, annually



AB 802

Building Exemptions

- Industrial Buildings: If more than 50% of the Gross Floor Area is used for manufacturing or scientific experiments:
 - Includes a main production area with high ceilings and contains heavy equipment used for assembly line production
- If the building did not have a certificate of occupancy for more than ½ of the calendar year
- If the building is scheduled to be demolished one year or less from the reporting date
- Condo complexes



AB 802

Enforcement

- We have been advised, by the CEC, they will be fining for 2020 non-compliance due 6/1/2021.
- Failure to comply:
 - In 2021 California Energy Commission (CEC) will notify the person responsible (building owner) of non-compliance
 - If after five working days, the owner does not comply, the owner will be subject to a **civil penalty** (after a hearing that complies with constitutional requirements)
 - Civil Penalty will not be less than **\$500** nor more than **\$2,000** for each category of data for each day the violation existed and continues to exist

Public Resources Code #25321



AB 802 Public Disclosure Dashboard



California Building Energy Benchmarking Prog.. Site Energy Use Intensity

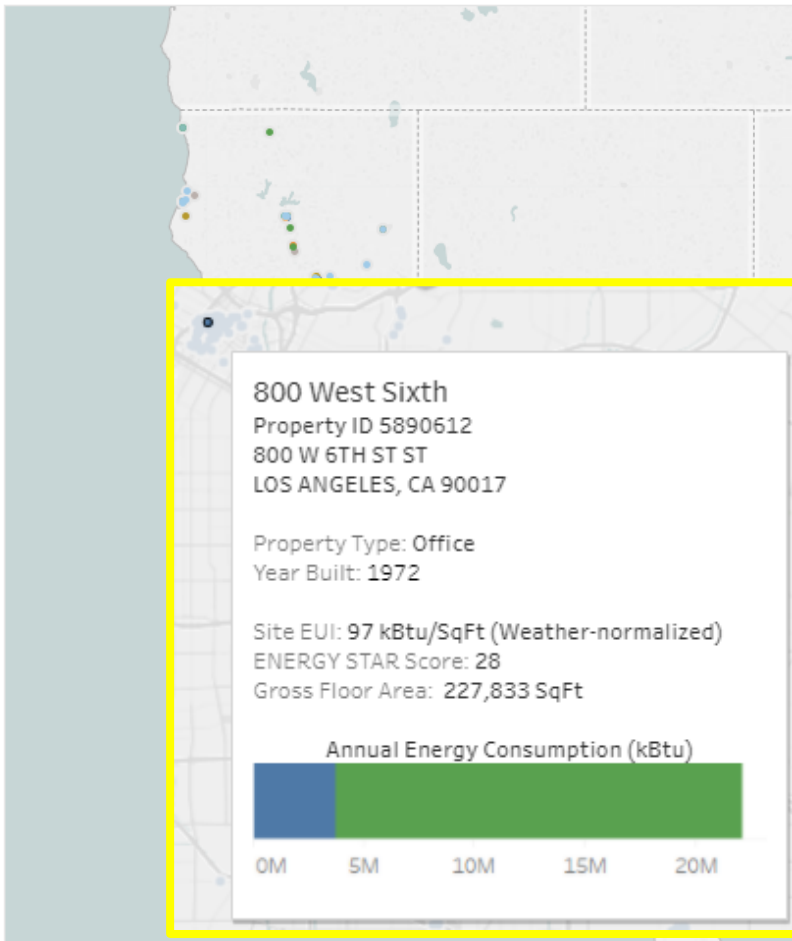
EUI Display
Histogram

- Property T.. All
- Search Indi.. No items highlighted
- Select Mult.. All
- ENERGY ST.. All
- Vintage All
- Site EUI (k.. All values
- ENERGY ST.. All values
- Building GF.. All values
- Comparison
- Find a: ZIP Code
- Search:
- Compare to:
- Results (Check to Exclude)
 - Search Above for Results
- Report Type All

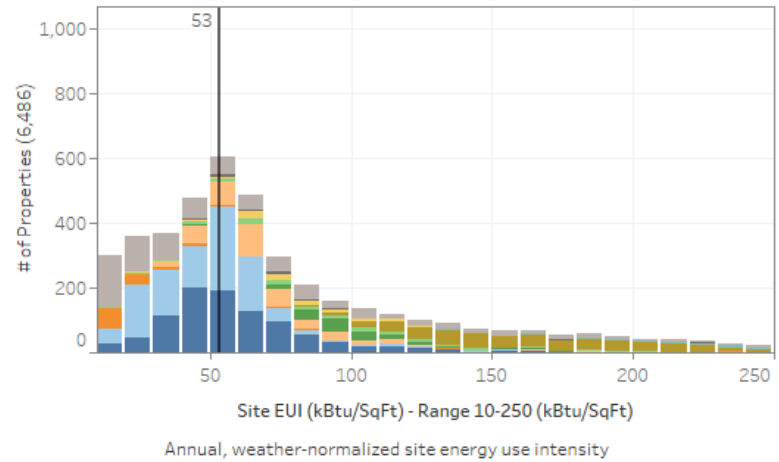
Data downloaded November 7, 2019.
Data are displayed as received from building owners.
Data from exempted local benchmarking programs are not currently included.
*Weather normalized
**Not all building types are eligible for an ENERGY STAR Score

For questions contact
Benchmarking@energy.ca.gov or
(855) 279-6460.

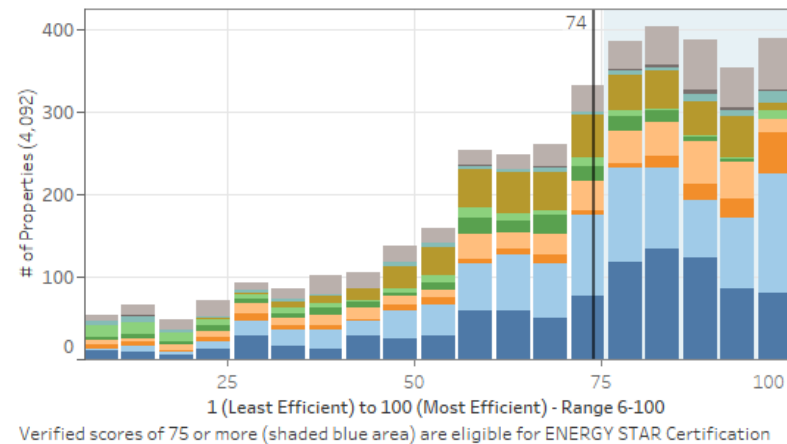
Building Energy Benchmarking Program



- Office
- Wholesale Club/Supercenter
- Hospital
- Retail Store
- Medical Office
- Mixed Use Property
- Warehouse & Self-Storage
- Supermarket/Grocery Store
- All Other
- Hotel
- Movie Theater



ENERGY STAR Score





Local Energy & Water Disclosure Ordinances

City Building Energy Benchmarking & Disclosure Programs requiring owners of large commercial and multifamily buildings to report energy use annually.

Some cities also require performance reporting, typically due every 5 years to demonstrate efficiency

Local Energy & Water Disclosure Ordinances



- Requirements of achieving performance targets or completing additional actions
- Benchmarking policy for public, commercial, and multifamily buildings adopted
- Benchmarking policy for public and commercial buildings adopted

- **Los Angeles Existing Buildings Energy and Water Efficiency Program**
20K+ SqFt
- San Diego Building Energy Benchmarking Ordinance | **50K+ SqFt**
- San Jose Building Performance Ordinance
20K+ SqFt
- San Francisco Existing Buildings Energy Performance Ordinance |
10K+ SqFt commercial, 50K+ SqFt MF
- Berkeley Building Energy Saving Ordinance (BESO) | **25K+ SqFt**



City of Los Angeles

EBEWE Program



Existing Building Energy & Water Efficiency Program (EBEWE) requires owners of large commercial and multifamily buildings to:

Phase I: Report energy & water use to LADBS by **June 1, annually**

Phase II: Report performance documentation **every 5 years**

EBEWE Requirements

WHO:

Owners of commercial buildings 20k+ Sq.Ft (no exception for manufacturing)

Owners of Multi-Family buildings 20k+ Sq.Ft

WHERE:

Los Angeles City (not County), includes LADWP service area. Identified by a LADBS Building ID and was issued an official* notice from the city

WHAT:

PHASE I: Complete ENERGY STAR® benchmarking report with energy (electric, gas & water) use from previous 12-month calendar year.

PHASE II: Complete performance reporting following either the performance path (score of 75+), or prescriptive path (score below 75)

WHEN:

Submit benchmarking report to LADBS by June 1, annually

Submit performance report to LADBS every 5 years, starting in 2021 (based on last digit of Building ID)



Requirements of Phase II Performance Reporting



Energy Audit

- Undergo an ASHRAE Level II audit and meet or exceed the standards
- Typically \$.15 - \$.40/sq.ft. depending on sq.ft., building type, and complexity



Retro-Commissioning

- Make sure all building systems are operating as designed and for maximum efficiency
- Perform installation of recommendations: ie: LEDs, Solar film, HVAC retrofit, Solar PVs, etc



Meet an Exemption

- Energy Star Certification
- Certify 15% energy and 20% water reduction over 5 years
- Install prescribed measures for buildings with simple systems



EBEWE Building Exemptions

Occupancy Exemptions

- No Certificate of Occupancy or Temporary Certificate of Occupancy for the entire calendar year to be benchmarked
- The entire building was not occupied, due to renovation, for the entire calendar year required to be benchmarked
- Demolition permit issued or commenced on or before the date the benchmarking report is due
- The building did not receive energy or water services for the entire calendar year required to be benchmarked

Property Type Exemptions

- One- and two-family dwellings
- Residential hotels
- Broadcast antennas
- Vehicle charging stations
- Utility pumping stations
- Treatment facilities
- Sound stages
- Production and post-production of motion pictures, television, and similar uses



EBEWE Public Disclosure Dashboard



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Existing Buildings Energy & Water Efficiency (EBEWE) Progr...
 The City's Existing Buildings Energy & Water Efficiency (EBEWE) Program was established in 2016 ▶

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Find in this Dataset

Address	APN	Year	Compliance	Energy	Water	Cost	Value	Energy	Water	Company	Cost	Energy	Water
6350 SANTA MONICA BLVD	462366855498	0.0	COMPLIED	Not Available	Not Available	Not Available	No	Not Available	Not Available	A&G, LLC	33463.0	Not Available	Not Available
1201 N GOWER ST	463902856392	59.9	COMPLIED	-54.4	-54.4	100.0	No	Not Available	Not Available	Burton, Fer...	59622.0	Not Available	Not Available
939 N MARIPOSA AVE	470968854426		NOT COMP...										
8700 PERSHING DR	427980806270	377.4	COMPLIED	-31.1	-31.1	99.0	No	Not Available	Not Available	equity resid...	183174.0	Not Available	Not Available
10514 NATIONAL BLVD	436324833365	194.0	COMPLIED	14.0	14.0	30.0	No	Not Available	Not Available	Vert Energy ...	60115.0	Not Available	Not Available
7200 HOLLYWOOD BLVD	456595859403	120.3	COMPLIED	-30.2	-30.2	92.0	No	Not Available	Not Available	Conservice, ...	53616.0	Not Available	Not Available
1861 N VAN NESS AVE	465989860739	55.9	COMPLIED	-7.4	-7.4	61.0	No	Not Available	Not Available	Unknown	25537.0	Not Available	Not Available
501 S ANDERSON ST	493433837284	597.3	COMPLIED	27.7	27.7	35.0	No	Not Available	Not Available	Ace Beverage	161000.0	Not Available	Not Available
6209 RESEDA BLVD	399397889328		NOT COMP...										
14710 BLYTHE ST	424576900927		NOT COMP...										





Why Comply?

The business case for energy efficiency

Increased Valuation of Energy Efficient Buildings

MEANS:

Gross Revenue ▶ ▶ ▶ ▶ ▶ ▶ ▶ ▶ higher rents
Less: Vacancy ▶ ▶ ▶ ▶ ▶ ▶ ▶ ▶ lower vacancy vs. market

Effective Revenue

Less: Expenses ▶ ▶ ▶ ▶ ▶ ▶ ▶ ▶ lower utility bills, maintenance, reserves

Net Operating Income ▶ ▶ ▶ ▶ **HIGHER NOI**

NOI/CAP Rate=Value ▶ ▶ ▶ ▶ **LOWER CAP RATE**

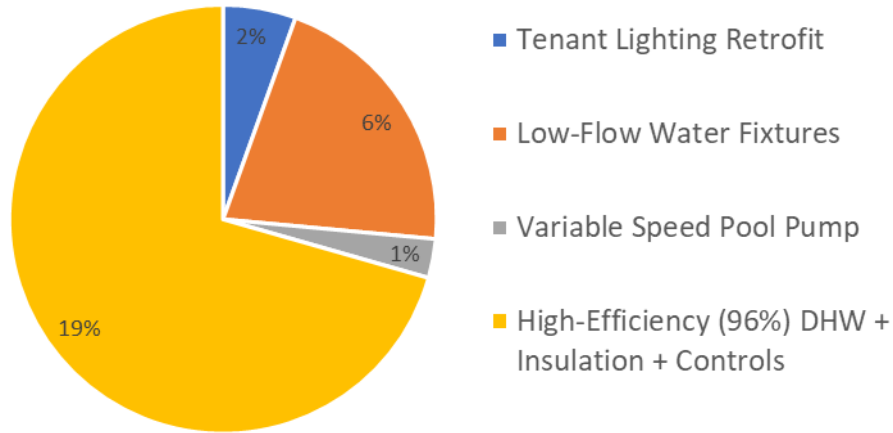
= HIGHER VALUE FOR THE PROPERTY

Source: IMT Institute for Market Transformation and Appraisal Institute

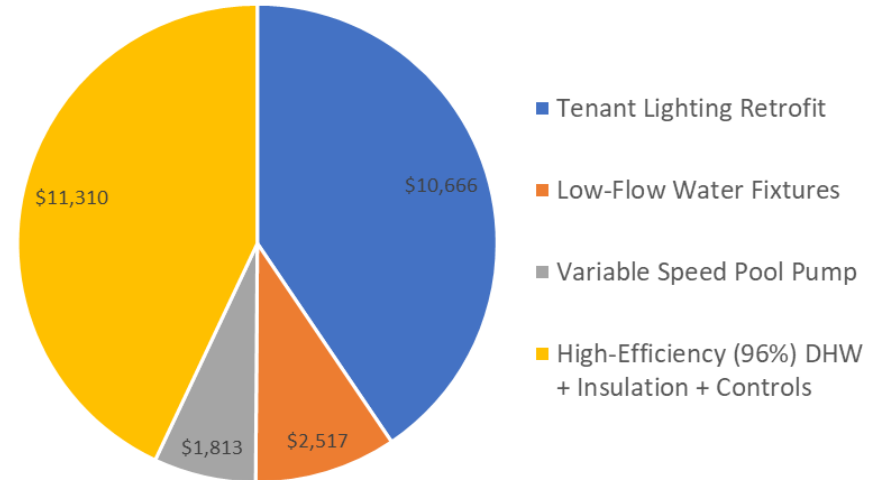


Case Study: Green Loan - Multi-Family Property - SoCalREN Incentive Program

SoCalREN Incentive: Projected Energy Savings



Estimated Annual Cost Savings



SAVINGS FROM REBATES & INCENTIVES

Project Price	Projected Incentive	Net Price	Incentive Savings
\$ 135,273	\$ (53,426)	\$ 81,847	39%

INCREASE IN VALUATION

Annual Cost Savings (Common Area)	\$ 15,813
Cap Rate	4.5%
Increase in Valuation	\$ 351,399

OPERATING SAVINGS (Common Area)

	kWh	% kWh Saved	Therms	% Therms Saved
Annual Usage	62,623	44%	28,771	28%
Total Est. Savings	27,493		7,942	
Net Est. Usage	35,130		20,829	

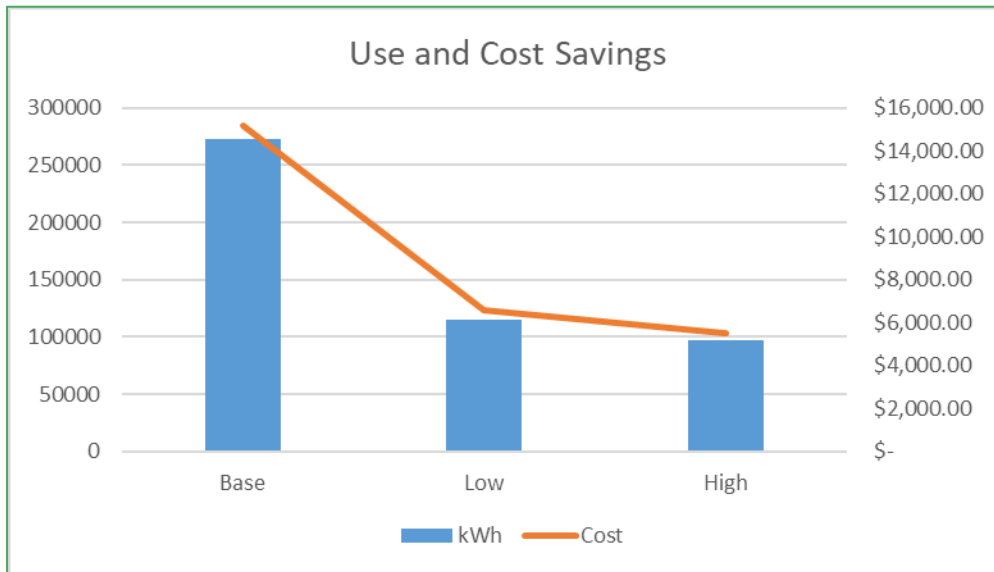
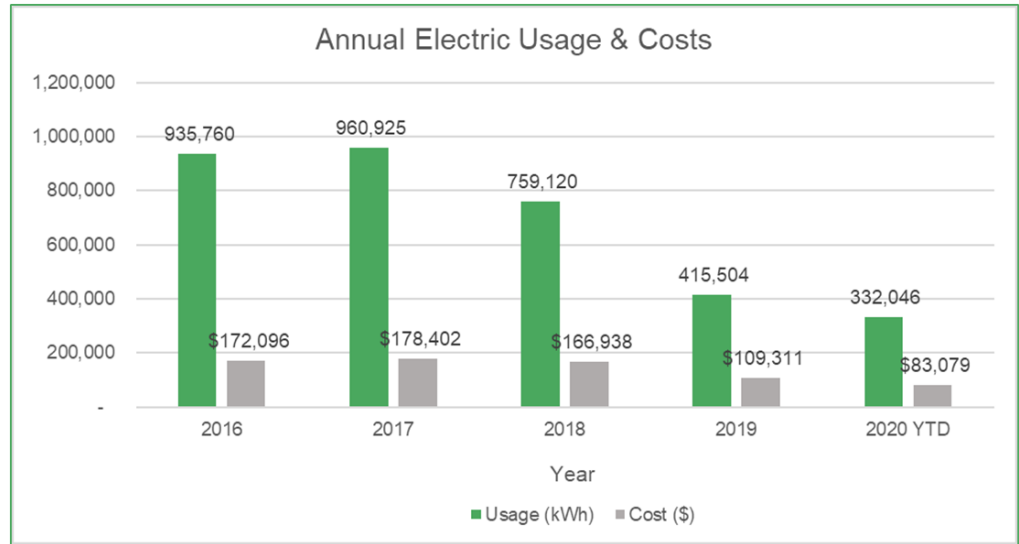
**Baseline
ENERGY STAR
Score**

61

Case Study: Office Building Retrofit and Water Sub-Metering

Measures

- HVAC Evaporcool
- Digital Thermostats
- Solar PV
- LED Lighting
- EV Charging
- Energy 360 Management System



Baseline ENERGY STAR Score

26

Current ENERGY STAR Score

90



Case Study: Master Water Meters

Sub-Meter to Reduce Sewer Costs and segregate irrigation water from Tenant Use

Sample LADWP Water Billing			
01/02/20 - 03/02/20		61 # of Days	
	Total Usage (hcf)	Cost	Cost per HCF
Water Cost (HCF)	345	\$2,249.07	\$6.52
Sewer Cost	345	\$1,754.23	\$5.08
Sewer Cost to Water Cost	\$0.78		

Based on the # of Occupants in the building we calculate the Payback Period as:

Percentage of Total Irrigation Water	11%
Cost Savings for Irrigation	\$186.91
Approx. Cost to Submeter	\$2,500
Number of months to payback	13
Approx. Number of Years	1.1

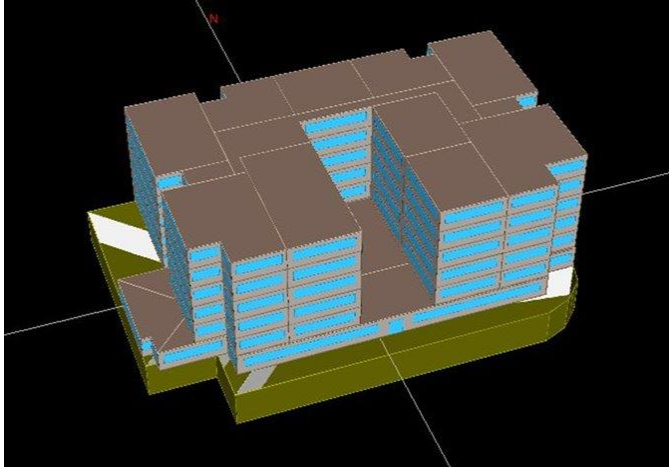




Cost-Effective Approaches to Energy Efficiency

New Developments

Energy Modeling Provides Higher Efficiency Opportunities



- 20% Annual Energy Savings by using High Efficiency System
- Payback period will drive the decision—based on sale or hold of property once occupied
- Long term energy savings will result in higher valuation

System	Annual Electricity Usage (kWh)	Annual Natural Gas Usage (Therms)	Annual Electricity Cost (\$)	Annual Natural Gas Cost (\$)	Annual Total Cost (\$)
Title-24 Base System	1,398,500	13,157	\$223,760	\$9,868	\$233,628
High Efficiency System	1,102,600	14,230	\$176,416	\$10,673	\$187,089
Difference/Savings	295,900	-1,073	\$47,344	(\$805)	\$46,539



Energy Efficiency Retrofit Opportunities

- **LEDs** can reduce energy consumption by 20 – 25% of the building's energy usage. LEDs eliminate the heat that is generated by fluorescent lamps causing a reduction in HVAC load.
- Better **HVAC control** will reduce energy waste especially when spaces are unoccupied.
- **Solar generation** will not only offset kWh usage but will reduce kW demand charges which will continue to drive the increase in cost, also, known as peak demand.
- The addition of **battery storage** will also help navigate meeting increased demand in later hours of the day. TOU is now 4 - 9pm in SCE territory. TOU is 1- 5pm in LADWP.
- **Maintaining equipment** is also key to reducing energy waste, maintenance and replacement costs.





Where Are We Headed?

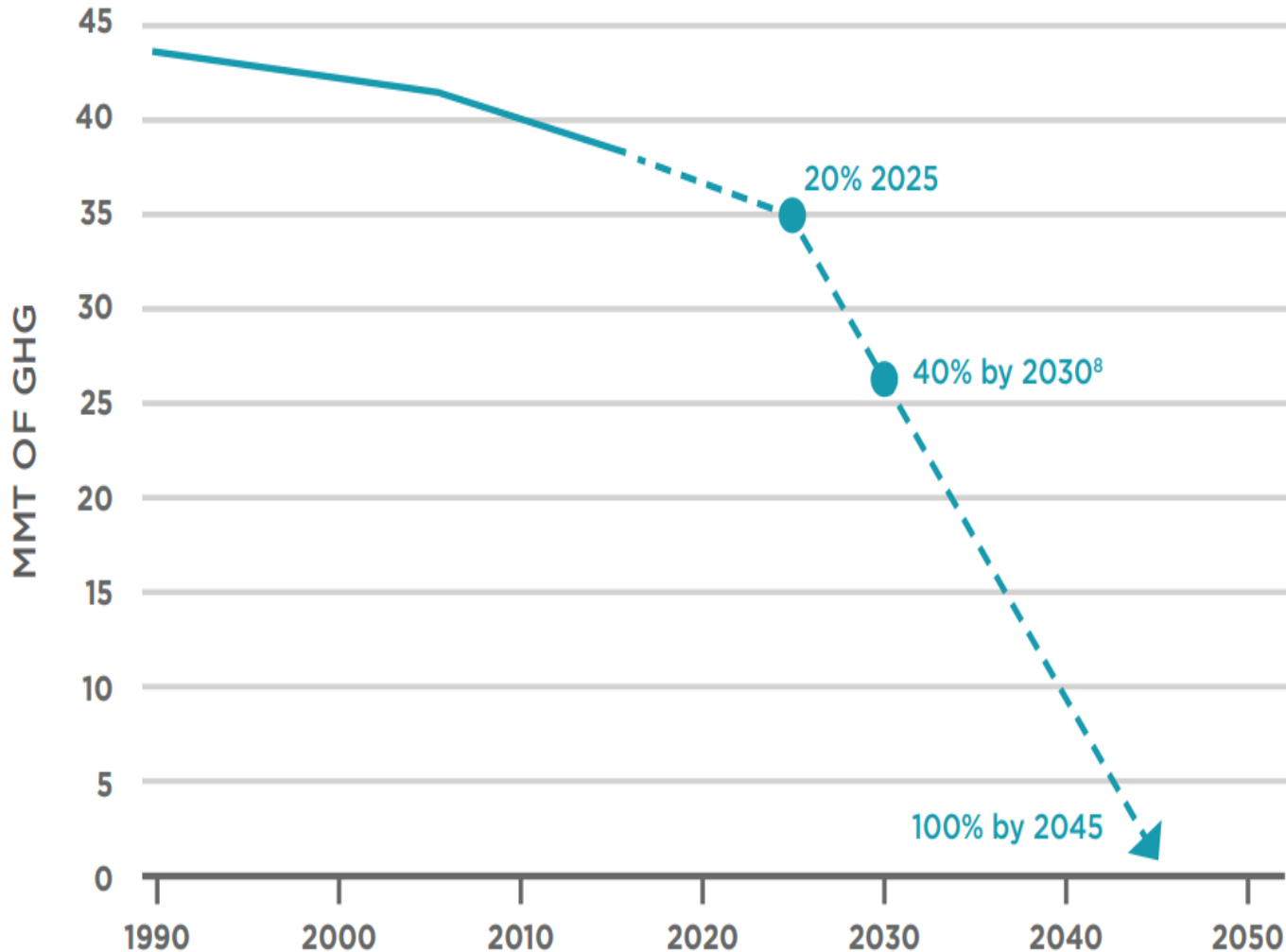
Zero Net Carbon, Moving *AWAY* from Zero Net Energy

Electrification

- Decarbonizing electricity generation is critical to achieving net zero emissions
- The process of eliminating gas consuming applications out of buildings
- Focus initially will be on multifamily and single family residential
- Commercial buildings electrification is more complicated and therefore will take longer
- New building code focused on electrification. New construction will be focused on building without gas

California's Focus on Decarbonization

DECARBONIZATION OF THE BUILDING SECTOR



Methods

- Elimination of gas
- Increase in Renewable Energy
- Energy Efficiency Retrofits
- Healthy Buildings
 - Green Lease
 - Green Loans
 - Fitwel Certifications



Rebates & Incentives

Financing Energy Efficiency

Issues With Who Pays for the Retrofits:

Solution: Green Leasing

Purpose: Aligning Landlord-Tenant Goals

Also called Aligned Leases, high-performance leases, or energy-efficient leases are rental agreements in which tenants commit to or gain incentives by participating in water/energy conservation, waste reduction and recycling, use of nonhazardous cleaning products, or other sustainable actions.

Helps eliminate the mixed incentive between the owner and tenant as to paying for energy efficient capital improvements.



Where is the Money?

Financing Options

LADWP Zero By Design: New construction exceeding building code by 10% = \$\$.

SBSP San Bernardino/Riverside counties: Incentives for gas consuming appliances in commercial applications for buildings with less than 50,000 annual therm use.

SC Edison: EV Charging Infrastructure Funding Q3 2021.

SoCalREN: Multifamily incentive program for SCE and SCG customers.

SoCalGas: Multifamily incentive program for replacement of gas consuming appliances.

All Utilities: MF and Single-Family residential incentives for ELECTRIFICATION

LADWP –CLIP (lighting)/CPP (all other measures) incentives for all types of improvements.

PACE (Property Accessed Clean Energy): Cost of energy efficiency retrofits are converted to assessments on the property taxes of the building.

Accelerated Depreciation/Cost Segregation: available for energy related improvements. New Tax Bill – Huge Benefits

Federal Tax Credit: 26% for Solar and Battery storage through Dec. 2022. Also available on roof, electrical work related to Solar install.

2021 Projected Federal Action

GOAL: Support the development of high-performing, safer buildings across all sectors

- Near term relief package, with hope for a larger stimulus in 2021
- Funding could prioritize:
 - Building efficiency retrofits
 - School construction and modernization
 - Workforce support in energy efficiency and clean energy sector or:
 - The creation of new, affordable housing



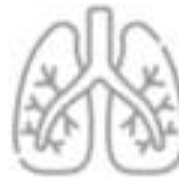
Net Zero
Tech



Market
Entry



Building
Decarbonization



Occupant
Health



Sustainable
Infrastructure



Clean
Construction

Green EconoME

- **Proven, Trusted Benchmarking Experts.** Over 1,600 buildings *accurately* Energy Star benchmarked
- **Perform Energy & Water Audits** to identify Energy and Water Waste (Lighting, and HVAC + water usage) and **comply with EBEWE & AB 802 Recommendations for Improvement**
- **Propose, prioritize & install energy efficiency improvements with highest ROI** and perform the installation. We are a License B and C-10 Contractor (#1001368)
- **Measure & Verify.** We make sure the energy efficiency retrofits are producing the planned energy saving results



Q&A | Thank You!



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