

Benchmarking Policy

County of

Santa Barbara

Facilities



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Prepared by

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1 Purpose

This Benchmarking Policy is part of the County of Santa Barbara's multi-pronged strategy to reduce energy use within its county buildings and contribute to strategies to reduce the County's energy costs.

The County of Santa Barbara has a Facilities Policy Framework for County Facilities Master Planning and this Benchmarking falls under the Framework's strategic umbrella. The benchmarking policy is also a component of the County's Sustainability Plan and serves as a decision-making tool to identify energy reduction projects that will be implemented between now and 2020. The benchmarking policy is also consistent with Resolution 09-059 which commits Santa Barbara County to take immediate, cost effective and coordinated steps to reduce the County's collective greenhouse gas (GHG) emissions in order to help mitigate the onset of climate change.

This benchmarking policy will enable the County to understand the relative energy efficiency of buildings or campuses owned and operated by the County, set energy savings goals, and regularly evaluate progress. The policy leverages the U.S. Environmental Protection Agency's (EPA) ENERGY STAR Portfolio Manager software as the policy's main implementation tool. Portfolio Manager helps identify and prioritize buildings with the greatest opportunities for reducing energy and operating costs, and it provides a means for tracking and improving performance over time.

Benchmarking provides a means of measuring progress on a building level towards the County's energy, utility bill reduction and GHG goals, and of prioritizing efficiency opportunities that best achieve the goals of the County.

It is anticipated that benchmarking will be used to:

- Inform the County about the relative energy performance of its facilities,
- Provide a methodology to support future energy performance measurement and management initiatives, and
- Inform the on-going development of energy and environmental policies and programs in Santa Barbara County.

2 Background

Legislative

AB 32 requires California to reduce statewide GHG emissions to 1990 levels by 2020. The AB 32 Scoping Plan identifies energy efficiency as one of the measures with the greatest GHG reduction potential. Therefore, the County of Santa Barbara has placed a strong focus on energy efficiency in its facilities operations. Not only do energy efficiency improvements have the potential to greatly reduce

greenhouse gas emissions, energy efficiency also plays an important role in decreasing the County's operational costs.

California Long-Term Energy Efficiency Strategic Plan (CEESP)

Adopted by the California Public Utilities Commission (CPUC) on September 18th, 2008 and updated in January 2011, the California Long Term Energy Efficiency Strategic Plan¹ is California's roadmap for energy efficiency through year 2020 and beyond. In essence, the CEESP provides key energy user segments, such as local governments, with detailed recommendations regarding how they can meet AB32 through implementation of energy efficiency improvements. This Benchmarking Policy directly complies with CEESP Goal 3: "Local governments lead by example with their own facilities and energy usage practices," Task 3.1.1. "Develop energy benchmarking policies and procedures to enable ongoing benchmarking of all local government facilities."

The County's Energy and Sustainability Efforts

On March 17, 2009, the Santa Barbara County Board of Supervisors adopted Resolution 09-059 which committed the County of Santa Barbara to take immediate, cost effective and coordinated steps to reduce the County's collective GHG emissions in order to protect the community from the effects of climate change and implement programs to comply with the State of California's GHG reduction goals. In order to assist the State in meeting the goals of AB 32, to comply with SB 97 and SB 375, and to prepare for any emerging federal climate legislation, the County of Santa Barbara prepared a Sustainability Action Plan and Climate Action Plan. In both plans, the County identifies ways it can reduce GHG emissions and disseminate information on how County residents and employees can adopt energy reduction practices.

In regard to County building operations, the County is committed to promoting energy efficiency to reduce energy consumption. Santa Barbara County's benchmarking policy will help track the energy and GHG emissions associated with County buildings. As building energy efficiency measures are implemented, Santa Barbara County can monitor their progress in managing energy consumption over time.

By benchmarking county facilities, Santa Barbara County can share best practices and lessons learned to help support other energy and sustainable efforts in the community including:

- South County Energy Efficiency Partnership
 - Offers free energy audit training for local professionals.
 - Provides rebates for energy efficient appliances.
 - Provides residential and commercial energy efficiency tips.
- Green Business Santa Barbara County
 - Recognizes sustainable businesses with certification.

- BuiltGreen Santa Barbara
 - Offers commercial and residential green building training and certifications.
- Innovative Building Review Program
 - Advises developers on how to make their developments more energy efficient.
- emPower Santa Barbara County
 - Helps homeowners countywide overcome financial barriers to making energy saving improvements to their homes.

ENERGY STAR Portfolio Manager

The Environmental Protection Agency's ENERGY STAR Portfolio Manager is the nation's leading energy performance benchmarking tool. Portfolio Manager enables the benchmarking of key metrics such as energy use and cost per square foot, water use, and carbon emissions. All building types can receive energy and water use intensity benchmarks, as well as a comparison of energy performance against the national median for buildings of a similar type. For eligible building types, Portfolio Manager also provides a 1-100 energy performance score that compares the energy performance of a building relative to similar buildings accounting for the impacts of climate and operating conditions. Benchmarking using Portfolio Manager provides both a method to compare the energy use of a building to itself over time, and a method to assess a building's relative energy performance in comparison to the energy intensity of other known buildings. Portfolio Manager is the leading tool used by government agencies that have implemented benchmarking policies and programs.ⁱⁱ

3 Benchmarking Policy Statement

It is the priority of Santa Barbara County to operate facility assets efficiently and to reassure local taxpayers that their resources have been well spent. As such, under the guidance of the County's Energy Manager, Santa Barbara County shall utilize the Environmental Protection Agency's ENERGY STAR Portfolio Manager energy management and tracking tool to benchmark certain County-owned buildings on a regular basis. The County will implement this policy in both North and South County and ensure consistency with the County's Sustainability Plan. The County will prioritize its highest-energy-intensity buildings and leverage automation tools that upload energy consumption data into Portfolio Manager. The County will use the Automated Benchmarking Services or Portfolio Manager Data Exchange offered by Southern California Edison, Southern California Gas and Pacific Gas & Electric or the automated utility data upload capability of the County's Utility Manager System.

4 Benchmarking Policy Elements

The policy is comprised of 6 key elements:

1. **Set Up Portfolio Manager Account** — The County's Energy Manager will set up an account on the EPA's Portfolio Manager system and upload the data for a targeted group of County buildings greater than 5,000 square feet. The buildings set up in Portfolio Manager will be selected based on criteria established by the County's Energy Manager consistent with the County's Sustainability Plan and also based on availability of automatic upload of energy consumption data into Portfolio Manager. The County will input building-specific characteristics such as square feet, number of workers, operating hours as directed by Portfolio Manager.
2. **Analyze Results** — Energy use will be benchmarked in terms of weather normalized Source and Site Energy Use Intensity (EUI) for all facilities, GHG emissions, and a 1-100 ENERGY STAR performance score for eligible facilities. The County's Energy Manager will analyze the EUI values and ENERGY STAR scores (if available) and use this data to prioritize energy investments. Buildings with higher EUI values or lower ENERGY STAR scores indicate the most promising candidates for both operational improvements and capital investments and will be evaluated more closely.
3. **Take Action** — Upon analysis of the benchmarking results, buildings will be prioritized based on the greatest need for improvement. These buildings should be the focus of resources such as energy audits and utility data analysis to better understand the building's systems and operations. Recommendations for building improvements will be generated and based the data at that time.
4. **Re-Benchmark and Track Progress** — Benchmarking will be repeated annually to assess progress relative to County building energy goals and to encourage continuous improvement. Re-benchmarking should also occur following the implementation of energy efficiency projects in targeted County buildings. Regular tracking of energy performance will be used to identify best practices and inform decisions regarding future energy management activities.

5. **Recognize Achievements** — Benchmarking data will be used to recognize building managers and occupants who contribute to energy reduction goals. It will also be used to seek external recognition opportunities, including the ENERGY STAR label for buildings that perform in the top quartile and ENERGY STAR leaders for organizations that achieve a 10 percent energy reduction or greater across their portfolio.
6. **Publicly Disclose Results** — Information generated by the benchmarking tool will be made available to the board of supervisors, and to the public on a yearly basis on the County’s green website. Such information shall include, but need not be limited to: (i) the energy use intensity, (ii) the water use per gross square foot (optional), (iii) where available, a score that compares the energy and water use of the building to that of similar buildings, and (iv), a comparison of data across calendar years for any years such building was benchmarked.

5 Departments Affected

Benchmarking of energy performance requires collaboration among multiple County departments. Specific roles and responsibilities are included below:

- **General Services**
 - **Facility Management Group’s Energy Manager** is responsible for leading benchmarking implementation, coordinating internal efforts, and sharing benchmarking results with other departments and encouraging energy efficient behavior by building occupants.
- **Department Heads** will be expected to review benchmarking results and integrate that data into operational decisions.

6 Outcome Measures

Yearly evaluations of benchmark results should be conducted against consistent (baseline) performance measures which will form the basis for tracking and measuring progress. Portfolio Manager provides:

- Site and Source Energy Use Intensity (EUI) values (kbtu/square foot)
- Median Source EUI values of similar building types
- Annual energy consumption (in kbtu and kWh and Therms (if applicable))
- Greenhouse gas emissions

7 AB 1103 Implications

California’s Nonresidential Building Use Disclosure Program (AB 1103)

In an effort to promote building energy efficiency in California, effective July 1, 2013, AB 1103 will require the owner of a nonresidential building within California, in advance of the sale, lease, and or

financing of the building, to benchmark the building's energy use using Portfolio Manager and to disclose statements of the building's energy usage to potential buyers, lessees, and lenders.

Though this policy only pertains to County buildings, the County of Santa Barbara hopes that by voluntarily benchmarking its buildings, it can serve as a model to commercial building owners who will be subject to AB 1103 disclosure.

8 Definitions

The following words and phrases, whenever used in this Policy shall be construed as defined in this section:

- “Automated Benchmarking System (ABS)” also known as “Portfolio Manager Data Exchange,” refers to the software system provided by the EPA that allows utilities and other Energy Service Providers (ESPs) to automatically, electronically transfer energy consumption data to and from Portfolio Manager via web services. These services eliminate the need for the County to manually input utility bill data into Portfolio Manager .
- “Baseline” is the quantification of historical energy usage of the building against which to measure energy and/or GHG emissions performance over time. The baseline can be used to track improvements over time, such as when energy efficiency retrofits or operations & maintenance updates are taken.
- “Benchmarking” also referred to as “Energy performance benchmarking,” tracks key energy consumption, energy performance and utility cost information of a building or group of buildings and compares it with other similar structures. Benchmarking can help set action priorities, identify under-performing buildings, verify performance improvements, and earn EPA recognition for superior energy performance.
- “Benchmarking Tool” refers to the U.S. Environmental Protection Agency’s ENERGY STAR Portfolio Manager, for the purpose of this benchmarking policy.
- “BTU” British thermal unit (BTU or Btu) is a unit of energy defined as the amount needed to heat one pound of water one degree Fahrenheit.
- “County Building” means a building, 5,000 gross square feet or more, where the County operates county business and it pays the building’s utility bills.
- “Energy” means electricity, natural gas, steam, heating oil, or other product sold by a utility or other energy supplier for use in a building, or renewable on-site electricity generation, for purposes of providing heating, cooling, lighting, water heating, or for powering or fueling other energy services in the building and related facilities.
- “Energy Action Plan” (EAP) for County operations identifies and prioritizes actions the County can take to reduce energy consumption and greenhouse gas (GHG) emissions associated with County

building operations. An EAP recommends GHG reduction actions, and establishes a framework for coordinating implementation, as well as monitoring and reporting on progress.

- “Energy Manager” refers to a designated person assigned to manage the energy performance of a building or portfolio of buildings.
- “ENERGY STAR Portfolio Manager” is a secure online interactive energy management tool developed and maintained by the U.S. Environmental Protection Agency (EPA) that allows users to assess and track energy and water consumption of commercial buildings or portfolio of buildings, and benchmark energy consumption to the building or to statistical norms. It enables users to track multiple energy and water meters, benchmark facilities relative to past performance, view percent improvement in normalized source energy, monitor energy and water costs, verify building energy performance, and determine energy performance ratings. For some qualifying building types, it also rates the performance of a qualifying building, relative to similar buildings, accounting for the impacts of year-to-year weather variations, building size, location, and several operating characteristics, using the EPA’s national energy performance rating system. For the purpose of this benchmarking policy, the EPA’s ENERGY STAR Portfolio Manager tool is the recommended benchmarking tool.
- “Energy Performance Score” refers to the numeric rating (1-100) generated by the ENERGY STAR Portfolio Manager tool that compares the energy usage of a building to that of similar buildings. There are 15 building types as defined by Portfolio Manager that can receive an energy performance score and eligible County Building types include: Office Buildings and Warehouses.
- “Greenhouse Gas Emissions (GHG)” GHG are the six gases identified in the Kyoto Protocol: Carbon Dioxide (CO₂), Nitrous Oxide (N₂O), Methane, (CH₄), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs) and Sulphur hexafluoride. GHG in this document means the amount of carbon dioxide equivalent emissions generated by the energy usage of the building. The GHG emissions for each building is calculated based on the amount of electricity and natural gas consumed, multiplied by the respective emissions factor for each fuel.
- “Median” represents the 50th percentile of a distribution (i.e. group or sample) of numbers. When the numbers in the group are ranked from smallest to largest, the median is the number in the middle. Half of the numbers in the group fall above the median and half of the numbers fall below the median.
- Median Energy Use Intensity (Median EUI)” is comparable to a score of 50 on the ENERGY STAR performance scale — where half of the buildings of a given type use more energy than the median and half of the buildings use less energy.
- “Site Energy” is a measure of energy that accounts for the energy consumed on site by the building.
- “Source Energy” refers to a measure that accounts for the energy consumed on-site in addition to energy consumed during generation and transmission in supplying energy to the site.

- “Source Energy Use Intensity (Source EUI)” refers to the energy consumed in the generation, transmission, and distribution of electricity, as well as the energy losses from storing, distributing, and dispensing natural gas. Source Energy Use Intensity is given in kBtu/sq. foot.
- “Utility Manager” is a software program for tracking and managing utility bills by delivering energy and greenhouse gas tracking, utility bill processing, reporting, analyzing, and benchmarking. A utility manager system can be used with Portfolio Manager to provide more detailed data on the energy usage of a building.

ⁱ California Public Utilities Commission. “California Energy Efficiency Strategic Plan January 2011 Update.” 2011. Available at: http://www.cpuc.ca.gov/NR/rdonlyres/A54B59C2-D571-440D-9477-3363726F573A/0/CAEnergyEfficiencyStrategicPlan_Jan2011.pdf

ⁱⁱ More than 270,000 buildings have been benchmarked voluntarily across the U.S. using Portfolio Manager. In addition, several states, cities and counties have adopted benchmarking policies. Additional information on selected city, county and state benchmarking policies can be found at:

- City of Austin, Texas. “Energy Conservation Audit and Disclosure Ordinance”. 2011. Available at: www.ci.austin.tx.us/edims/document.cfm?id=152241
- New York City, New York: Local Law No. 8413 (part of the Greener, Greater Buildings Plan). 2009. Available at: www.nyc.gov/html/planyc2030/downloads/pdf/ll84of2009_benchmarking.pdf
- City of San Francisco, California: Existing Commercial Buildings Energy Performance Ordinance. 2011. Available at: www.sfenvironment.org/ecb
- Washington, D.C.: Clean and Affordable Energy Act. 2008. Available at: http://green.dc.gov/sites/default/files/dc/sites/ddoe/publication/attachments/CAEA_of_2008_B17-0492.pdf
- Washington State Legislature. RCW 19.27A.170 Qualifying Utilities—Maintenance of Records of Energy Consumption Data—Disclosure. 2010. Available at: <http://apps.leg.wa.gov/rcw/default.aspx?cite=19.27A.170>