



Existing Commercial Buildings Energy Performance Ordinance: Confirmation of Energy Audit Guidelines

This document explains how to file a Confirmation of Energy Audit, and is intended for energy services professionals helping building owners fulfill the energy audit requirement of the Existing Commercial Buildings Energy Ordinance (Environment Code Chapter 20 – referred to as ‘ECB Ordinance’).

The objectives of the Confirmation of Energy Audit tool are:

1. Obtain the information required by the ordinance and sufficient data to confirm compliance.
2. Be as simple as possible.
3. Accept consistent data, which facilitates timely confirmation of compliance or the need for follow up, as well as analysis of aggregated data.

Requirements for Building Owner

The intent of the Existing Commercial Buildings Energy Ordinance is to use information to catalyze energy efficiency improvements. The ordinance requires owners of nonresidential buildings greater than 10,000 square feet in San Francisco to have a comprehensive energy efficiency audit of the whole building performed by a qualified Energy Professional. Audits must meet or exceed the American Society of Heating, Refrigeration, and Air-Conditioning Engineers ([ASHRAE](#)) *Procedures for Commercial Building Audits* (PCBEA). The audit requirements are:

Building Size	Minimum Level of Effort
50,000 square feet and larger	ASHRAE Level 2 – An “intermediate” survey and energy analysis
10,000 to 49,999 square feet	ASHRAE Level 1 – A basic energy analysis

Buildings that are large or have complex central systems are encouraged to consider retrocommissioning as an alternative way to meet the audit requirement. Section 2004 (b.2.C) of the ECB Ordinance implies that implementation of comprehensive energy efficiency measures throughout the building could be accepted *in lieu* of a formal audit; however, such an option is not available at this time.

The result of the audit or retrocommissioning is a detailed Energy Audit Report laying out the cost-effective energy efficiency improvements available in the building. It is the building owner's decision whether to take advantage of available financing and incentives by implementing energy efficiency opportunities.

It is not necessary to share an entire Energy Audit Report with the City. Instead, the Department of Environment receives a limited summary called a Confirmation of Energy Audit, which is filed online.

For details, such as professional qualifications for Energy Professionals: www.sfenvironment.org/ecb.

Energy Professional Responsibilities

A qualified Energy Professional must:

- Hold the requisite professional qualifications;
- Perform a comprehensive energy audit of the whole building meeting the applicable Level of Effort;
- Deliver a signed Energy Efficiency Audit Report to the building owner. The Audit Report must meet the reporting standards of the Level of Effort, particularly the low-cost/no-cost measures, capital improvements, and operations and maintenance practices available to cost-effectively improve energy efficiency; and
- File a condensed summary, called a Confirmation of Energy Audit, with the Department of Environment.

For more information visit SFEnvironment.org/ecb or call (415) 355-3750

SF Environment is a Department of the City & County of San Francisco.

Confirmation of Energy Audit

The ECB Ordinance requires a Confirmation of Energy Audit (CEA) to be a summary of the Energy Efficiency Audit Report. At this time, the Confirmation of Energy Audit tool is an online form, which is as similar as possible to the ASHRAE PCBEA Energy Efficiency Measure Summary table (<http://ashrae.org/PCBEA>.) The web form is the only way to finalize the audit at this time.

The Confirmation of Energy Audit must include:

- Contact information for the building and building owner, or their representative
- Energy Professional, their qualifications, and when the audit was completed
- An inventory of a building's assets, including: Lighting, HVAC Systems, and Service Hot Water System
- A list of all cost-effective retrofit (or retro-commissioning) measures identified. For reporting purposes, "cost-effective" means energy efficiency measures that are estimated to either:
 - Have a simple payback of 3 years or less,
 - Have positive net present value,
 - Comprise an integrated package with an overall simple payback of approximately 3 years, OR
 - Comprise an integrated package with positive net present value.

Instructions

A Confirmation of Energy Audit may only be filed by the Energy Professional responsible for the audit.

Access to the Confirmation of Energy Audit tool

1. Register for a free account with the U.S. Department of Energy's Building Energy Asset Score Tool [<https://buildingenergyscore.energy.gov/>]. Be sure to use the email address you will use for submitting the Confirmation of Energy Audit.
2. Validate email address and login to the tool.
3. Create a new audit report by clicking on the "New Audit Report" button on the right side and select "Other City Report". Be sure to select "San Francisco Report" as the report type.

Filing a Confirmation of Energy Audit

1. **Overall:** Go through each of the tabs (Building Information, Contact Information and Audit Details, Facility Description, and Utility Data and benchmarking) and complete all fields marked required by a red star ★. All other fields are optional to fill in. For clarification on

a field, you can click on the question mark circle to reference the user guide.

2. **Utility Data and Benchmarking - Preliminary Energy-Use Analysis:** Confirm whether the ENERGY STAR Portfolio Manager data for the building is consistent with the Preliminary Energy-Use Analysis for the whole building, including monthly energy use history and gross floor area.
 - a) To confirm you have reviewed energy usage history and gross floor area in Portfolio Manager, enter the Portfolio Manager Building ID for the building. This ID should match the most recently submitted Annual Energy Benchmark Summary. If the Portfolio Manager data cannot be accessed, enter "NA." Note: If the Portfolio Manager ID does not match benchmark submittals, confirmation of compliance may be delayed.
 - b) The Gross Floor Area inputted into the CEA-must be based on your observations and the standard definition. *Do not* rely on County records, estimates from SF Environment, or commercial real estate databases for this metric. If the Gross Floor Area observed differs significantly from the square footage in Portfolio Manager – more than +/- 3% – notify the client in writing. (Email is fine.) An estimate of *Gross Floor Area* is required even if the Energy Professional cannot access Portfolio Manager data for the building.
 - c) Indicate whether the gross floor area and historical energy use data in Portfolio Manager for the building are complete and consistent with your observations. Are all energy sources and meters for the facility included in the energy usage history? If the Portfolio Manager data is incomplete or inaccurate, notify the responsible party and indicate accordingly.
 - d) If it is not possible to review ENERGY STAR Portfolio Manager data for the entire building, indicate why. Non-compliance by current tenants does not necessarily prevent access to Portfolio Manager; such cases should be indicated as "... incomplete" in (c) above. Examples of circumstances where it is not possible to review Portfolio Manager data:
 - Building transacted (sale or lease) after most recent benchmark submittal (preventing access to historical energy use of prior owner or tenants)
3. **Energy Efficiency Measures:** Energy efficiency measures can be group together in packages. Packages should only include measures from the same End Use Category and/or that affect the same system. (For example, enter measures associated with the Measure Categories of boiler plant improvements and lighting improvements as separate packages; and enter HVAC measures for air handler units vs. packaged terminal units as separate packages.) Create a package, by

typing in a package name and selecting a recommendation category. Click "Add measure" to add additional EEMs to a package.

Summarize all practical Energy Efficiency Measures (EEM) that meet the criteria specified by the ordinance: a simple payback \leq 3 years or positive net present value (NPV). Including additional measures is optional, and encouraged.

- a) **Measure Description:** Briefly describe the change(s) recommended in the measure. For example, "Replace (70) 60w incandescent lamps with 11w CFLs." Be as specific as possible.
 - b) **Rebate:** Indicate whether, to the best of your knowledge, a rebate or other incentive is available to reduce the net cost of the measure and input the estimated value under potential incentives. The Energy Professional is not required to guarantee a rebate is available, nor its exact value.
4. **Confirmation of Audit Completion:** Affirm the Energy Audit and reports are being filed in fulfillment of the audit requirement of the ECB Ordinance. Sign by typing your full name. Submit the Confirmation of Energy Audit.

Definitions of Key Fields

Field	Definition
Building Gross Floor Area	Gross floor area per the standard definition as cited by ASHRAE PCBEA "The sum of the floor areas of all spaces within the building with no deductions for floor penetrations other than atria. It is measured from the exterior faces of exterior walls or from the centerline of walls separating buildings, but it excludes covered walkways, open roofed-over areas, porches and similar spaces, pipe trenches, exterior terraces or steps, roof overhangs, parking garages, surface parking, and similar features." (Do not rely on County records or rentable square footage, which differ from the standard definition.)
Electricity Savings	Estimated reduction in annual electricity use attributable to the EEM, measured in kilowatt hours per year. (kWh/yr)
ENERGY STAR Portfolio Manager Building ID	A unique number assigned to each building in Portfolio Manager. Referred to as "Building ID" within Portfolio Manager.
Estimated Rebate	Estimated value of the available rebate or incentive which may be available to reduce the cost of implementing the

	EEM, in dollars. (\$)
Gas/Fuel Savings	Estimated reduction in annual use of natural gas (or similar fuel combusted or consumed onsite) attributable to the EEM, measured in therms per year (therms/y)
Measure Cost	Estimated cost to implement the EEM, excluding rebates or similar financial incentives that may be available, measured in dollars. (\$)
Measure Description	The set of system(s) directly affected, and the general action(s) that best describe an EEM.
Measure Life	Estimated useful life of the EEM, measured in years. (yr)
Narrative Description	A brief description of the recommended measure, including a brief indication of pre- and post- states. Standardized utility measure codes may be used.
Net Measure Cost	Estimated net cost to implement the measure. This field is calculated automatically, by subtracting the Estimated Rebate from the Measure Cost for the EEM.
Peak Demand Savings	Estimated reduction in peak electric demand for the EEM, measured in kilowatts (kW.)
Portion of Building Affected	Indicator of the scope of the measure.
Rebate Available?	Indicates whether the Energy Professional is aware that a rebate or similar financial incentive may be available to reduce the cost of the EEM. The Energy Professional is expected to be familiar with common rebates published by the applicable utility.
Steam Savings	Estimated reduction in annual consumption of steam attributable to the EEM, measured in British thermal units per year. (BTU/yr)
Total Annual Cost Savings	Estimated reduction in annual energy cost attributable to the EEM, measured in dollars per year. (\$/yr)

Frequently Asked Questions

How will the CEA tool be updated?

Expect minor updates, and please send feedback & requests to: benchmark@sfenvironment.org. At the time of release, a number of upgrades are in preparation, and others under consideration, to: improve Energy Professional work flow, respond to requests for features, and better acquire consistent data for analysis. If you discover a software issue in the web tool you can contact the Asset Score Audit Template helpdesk through the site itself.

What Level of Effort is the CEA intended for?

At the time of release, is primarily intended for immediate use filing confirmations of ASHRAE Level 2 audits. Confirmation of retrocommissioning results and Level 1 audits will also be accepted via the same CEA tool.

How will the CEA differ for Level 1?

To catalyze energy efficiency improvements, an audit must identify credible, specific, and actionable energy savings opportunities. In a Level 1 audit, rough quantification is expected by both the ECB Ordinance and the ASHRAE PCBEA that it references:

- Pp. 8-9 (2nd Ed), the *Procedures for Commercial Building Energy Audits* state that the walkthrough includes identification of low/no-cost changes, potential capital improvements, and possible operations and maintenance improvements; including estimates of the approximate costs and savings from these changes.
- [SF Env Code Chapter 20 Sec. 2003.b.2.C](#) requires the Confirmation of Energy Audit to include, "The sum of estimated costs, as well as the sum of estimated energy savings in the list of identified measures..."

The CEA is therefore not expected to change substantially for Level 1 audits. (Rough estimate of demand savings remains good practice in facilities with significant demand costs.) Financial analyses in a Level 1 are expected to be limited to estimates of simple payback.

Preliminary Energy-Use Analysis

Key elements of the Preliminary Energy-Use Analysis (PEA) described in the ASHRAE PCBEA include analysis of historic utility use, calculation of EUI (which depends upon gross floor area,) and comparison to energy performance of similar buildings. Benchmarking with ENERGY STAR Portfolio Manager is generally required prior to the audit, and should

streamline PEA in most cases because it requires historic utility use and gross floor area, calculates EUI, and provides performance comparisons with similar buildings. The Confirmation of Energy Audit confirms that the Energy Professional has attempted to complete the Preliminary-Energy Use Analysis by reviewing the ENERGY STAR Portfolio Manager data used to benchmark the building.

The Energy Professional does not to assume any added responsibility for benchmarking the building, nor for editing data in Portfolio Manager. If benchmarking data is incomplete or inconsistent with the Energy Professional's observations, it should be noted accordingly in the CEA, and the building owner should be notified. The text in the CEA does not constrain how you describe the PEA in the Audit Report, other than ensuring what's indicated in the tool is consistent with your written communication with the client.

Why include rebate information?

The Audit Report and the Confirmation of Energy Audit are expected to include reasonable estimates of the cost and savings from energy efficiency measures, within the limits of the applicable Level of Effort. California ratepayers invest nearly \$1 billion per year in energy efficiency, and financial incentives provided via these programs dramatically reduce the cost of many measures. As a result, cost estimates absent rebate information would often be grossly inaccurate.

The Energy Professional is not required to guarantee rebate availability, nor exact value. In the Energy Audit Report submitted to the client, it is a good idea to be explicit about limitations of rebate estimates, to include the source of the potential incentive, and to cite the circumstances or performance criteria necessary for the measure to qualify for the subsidy. SF Environment fully understands rebate values change periodically; the expectation is a good faith effort.

The Confirmation of Energy Audit is as similar as possible to the ASHRAE PCBEA Energy Efficiency Measure Summary table (<http://ashrae.org/PCBEA>), which includes potential utility incentives. You may include incentives from other sources where applicable.

Will there be follow up after confirmation?

[SF Env Code Chapter 20 Sec. 2003.b.2.C](#) requires the Confirmation of Energy Audit to include an

“indication which measures at the option of the owner have been implemented.” CEAs may be filed shortly after delivery of the Energy Efficiency Audit Report to the owner or party responsible, leaving little time to implement the measure, so SF Environment may follow up at a later date to confirm which measures have been implemented, and to ensure the property owner has current information about available financing and incentives.

How will data from the CEA be used?

The Department of Environment is required to make public which buildings have not complied with these requirements. Where benchmarking metrics are required to be public for individual buildings, EEM data about individual buildings derived from Confirmation of Energy Audit submittals will not be shared or published, except with the permission of the owner, or their representative. Summary statistics about groups of buildings will be published, but not EEM data about individual buildings.

For More Information

Web: www.sfenvironment.org/ecb

Call: (415) 355-3750

Email: benchmark@sfenvironment.org