

Compliance Forms—

Energy Cost Budget Method

The following pages describe information that must be submitted to the code official when documenting compliance with energy code following the ASHRAE/IES Standard 90.1 Energy Cost Budget Method (ECB, Section 11). An electronic version may be downloaded from ASHRAE's website.

The documentation must meet requirements in Section 11.7.2 and make clear to the enforcement personnel what the building characteristics are and how the ECB Method has been applied.

Contact Information

This section records the building address and contact information of permit applicant, design professionals and energy modeler.

General Project Information

This section includes the following:

- a. Title and date for the design document package (drawings and specifications) that the proposed design model is based on.
- b. Whether submittal is for documenting minimum code compliance or above-code performance
 - a. The version of the simulation program and the link to the website that contains the ASHRAE Standard 140 results for the version used in accordance with Section 11.7.2(o).
 - b. Weather station used in the simulation and type of the weather file (e.g. TMY2, TMY3, etc.)
 - c. Project climate zone
 - d. Description of building areas and systems excluded from energy model, if any, as allowed by Table 11.5.1 #2.
 - e. Description of yet to be designed systems and components, if any (Table 11.5.1 Proposed Building Performance column #1(c).

Table 1 Building Area Summary

This section reports the different building uses included in the building as required in 11.7.2(c). The following must be provided for each building area type:

- a. Number of above and below grade floors
- b. Floor area broken out by space conditioning category as defined in Section 3 including conditioned, semi-heated, unconditioned and un-enclosed spaces.
- c. For each space conditioning category, new construction and alteration floor area are separately reported.

Table 2 Energy Sources

This section lists all purchased energy sources used in the proposed design such as electricity, gas, district steam and chilled water. (G3.1.2 m) For each energy source, the energy consumption units (e.g. kWh, MMBtu), energy demand units (e.g. kW, Btu/hr) are provided and utility rate structure used in the simulation is described, including but not limited to energy and demand charges, time of use charges and block rates. The source of utility rates must be included for each energy source (11.4.3.2, 11.7.2 k).

Table 3 Advisory Messages

This section reports information from the simulation runs that is helpful in identifying modeling problems or special situations (11.7.2 l). It also includes the number of hours when heating and cooling loads were not met, to allow verifying compliance with requirements in 11.5.2 i.

Description of Proposed and Baseline Design Models

This section includes the detailed information about systems and components in the proposed design model, the corresponding mandatory requirements, and the component in the budget design model.

Sub-sections are required for building envelope, HVAC, service water heating, power, lighting and other equipment. The level of detail provided for each system and component must be aligned with that in the compliance forms for Sections 5 – 10.

In addition, there will be a sub-section describing any process equipment included in the simulation and a sub-section for any other special systems such as combined heat and power.

The details provided in each subsection must include the following:

- a. A list of the energy-related features that are included in the design and on which compliance with the provisions of Section 11 is based. This list must document all energy features that differ between the models used in the energy cost budget and the design (11.7.2 d)
- b. A list showing compliance for the *proposed design* with all the requirements of Sections 5.4, 6.4, 7.4, 8.4, 9.4, and 10.4 (mandatory provisions). (11.7.2 e)

Renewable Energy

The information included in this section describes the renewable energy systems in the proposed design including technology type, system location, system ownership and generation output capacity, to establish applicability of renewable energy requirements in Section 11.4.3.

Exceptional Calculations

The section includes the list of exceptional calculations and a checklist to confirm that required supporting documentation for each exceptional calculation method is submitted (11.4.5).

Table 4 Energy Use and Energy Cost Summary by Energy Source and End Use

This table reports the energy use breakouts by end use and by fuel type. It also shows the percent difference between the proposed and the budget building design model. When the percentage value is less than 100%, then the proposed design is better than the budget.

Table 5 Energy Summary by Energy Source

The table shows energy use and cost by fuel type, and percent difference between proposed and budget design.

Supporting Documentation Checklist

This section lists supporting documentation that must be included along with the filled out compliance form (11.7.2).