



**BSR/ASHRAE/IES Addendum ar
to ANSI/ASHRAE/IES Standard 90.1-2022**

Public Review Draft

Proposed Addendum ar to Standard 90.1-2022, Energy Standard for Sites and Buildings Except Low- Rise Residential Buildings

**First Public Review (September 2024)
(Draft Shows Proposed Changes to Current Standard)**

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(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

FOREWORD

This addendum requires that an ECB and Appendix G analysis be conducted using actual utilities rates or supply contracts from utilities or energy suppliers versus average EIA rates when available. Actual utility rate schedules often include demand charges which can significantly impact the annual energy cost of a project, especially projects incorporating load management energy efficiency measures. Utility rates are typically available from provider’s website. Select rates may also be found at https://openei.org/wiki/Utility_Rate_Database

Note that the standard does not guarantee the prediction of actual building operational costs.

This addendum impacts an optional performance path in the standard designed to provide increased flexibility and therefore was not subjected to cost-effectiveness analysis.

[Note to Reviewers: This addendum makes proposed changes to the current standard. These changes are indicated in the text by underlining (for additions) and ~~striketrough~~ (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the current standard are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed changes.]

Addendum ar to 90.1-2022

Definitions:

~~*purchased energy rates: costs for units of energy or power purchased at the building site. These costs may include energy costs as well as costs for power demand as determined by the adopting authority. The tariff, published rate, or contract for energy to be used at the building site, including fixed charges, energy unit costs, and demand charges that can vary by quantity, time of use, or season.*~~

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12.4.3.2 Annual Energy Costs. The *design energy cost* and *energy cost budget* shall ~~be determined using rates for use~~ the applicable published *purchased energy rates* for the project (such as electricity, gas, oil, propane, steam, and chilled water) that are approved by the adopting authority.

Exception to 12.4.3.2:

1. For projects in the United States (US), where it can be demonstrated to the AHJ that applicable published energy rates are unavailable, the most recent state average annual *energy prices* published by the U.S. Energy Information Administration (EIA) for commercial customers or an approved alternative shall be used.
2. Where applicable published *purchased energy rates* are unavailable for projects outside of the US, an approved alternative shall be used.

Where *on-site renewable energy* or *site-recovered energy* is in excess of what is required in the *budget building design* by Table 12.5.1, the *budget building design* shall be based on the *energy source* used as the backup *energy source*, or electricity if no backup *energy source* has been specified. Where the *proposed design* includes *on-site electricity generation systems* other than *on-site renewable energy systems*, the baseline design shall include the same generation systems excluding its *site-recovered energy*.

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Table 12.5.1 Modeling Requirements for Calculating Design Energy Cost and Energy Cost Budget

Proposed Design (Column A) Design Energy Cost (DEC)	Budget Building Design (Column B) Energy Cost Budget (ECB)
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2. Additions and Alterations	
<p>It is acceptable to demonstrate compliance using <i>building</i> models that exclude parts of the <i>existing building</i>, provided all of the following conditions are met:</p> <ol style="list-style-type: none"> Work to be performed under the current permit application in excluded parts of the <i>building</i> shall meet the requirements of Sections 5 through 10. Excluded parts of the <i>building</i> are served by <i>HVAC systems</i> that are entirely separate from those serving parts of the <i>building</i> that are included in the <i>building</i> model. Design <i>space</i> temperature and <i>HVAC system</i> operating <i>set points</i> and schedules on either side of the boundary between included and excluded parts of the <i>building</i> are identical. If a declining block or similar utility rate is being used in the analysis and the When excluded and included parts of the <i>building</i> are on the same utility meter, the <i>purchased energy rates</i> shall reflect the utility block or rate for the building plus the addition. 	<p>Same as <i>proposed design</i>.</p>

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G2.1 Performance Calculations. The *proposed building performance* and *baseline building performance* shall be calculated using the following:

- The same simulation program
- The same weather data
- The same *purchased energy rates*

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G2.4.2 Annual Energy Costs.

- The *design energy cost* and *baseline energy cost* shall ~~use the applicable published~~ be determined using either actual rates for purchased energy rates for the project, or state average energy prices published by U.S. DOE’s Energy Information Administration (EIA) for commercial building customers, but rates from different sources may not be mixed in the same project.

Exceptions to (a):

- Where applicable published *purchased energy rates* are unavailable in the United States (US), state average *energy prices* published by the U.S. Energy Information Administration (EIA) for commercial *building* customers or an approved alternative shall be used.
- Where applicable published *purchased energy rates* are unavailable for projects outside of the US, an approved alternative shall be used.
- Where the proposed design utilizes purchased hot water, steam, or chilled water, such projects shall be modeled as using purchased electricity or gas in accordance with the “Proposed Building Performance” column of Table G3.1(10)(e), G3.1(10)(f), G3.1(11)(g). Where natural gas must be modeled in the baseline following Tables G3.1.1-2 or G3.1.1-3 but is not available at the building site, the state average energy prices published by EIA shall be used for natural gas, and either the actual rates published by

~~the utility serving the building or state average energy prices published by EIA shall be used for electricity.~~

- ~~b. Where *on-site renewable energy* or *site-recovered energy* is used, the *base-line building design* shall be based on the *energy* source used as the *backup energy* source, or the *baseline system energy* source in that category if no *backup energy* source has been specified, except where the *base-line energy* source is prescribed in Tables G3.1.1-2 and G3.1.1-3.~~
- ~~c. Where the *proposed design* includes *on-site electricity generation systems* other than *on-site renewable energy systems*, the *baseline design* shall include the same *generation systems* excluding its *site-recovered energy*.~~

~~**Informative Note:** The above provision allows users to gain credit for features that yield load management benefits. Where such features are not present, users can simply use state average unit prices from EIA, which are updated annually and readily available on EIA’s website (www.eia.gov).~~

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Table G3.1 Modeling Requirements for Calculating Proposed Building Performance and Baseline Building Performance

Proposed Building Performance	Baseline Building Performance
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2. Additions and Alterations	
It is acceptable to predict performance using <i>building</i> models that exclude parts of the <i>existing building</i> , provided that all of the following conditions are met: <ul style="list-style-type: none"> a. Work to be performed in excluded parts of the <i>building</i> shall meet the requirements of Sections 5 through 10. b. Excluded parts of the <i>building</i> are served by <i>HVAC systems</i> that are entirely separate from those serving parts of the <i>building</i> that are included in the <i>building</i> model. c. Design <i>space</i> temperature and <i>HVAC system</i> operating <i>set points</i> and schedules on either side of the boundary between included and excluded parts of the <i>building</i> are essentially the same. d. If a declining block or similar utility rate is being used in the analysis and the When excluded and included parts of the <i>building</i> are on the same utility meter, the <i>purchased energy rates</i> shall reflect the utility block or rate for the building plus the addition. 	If the proposed <i>design</i> excludes parts of the <i>existing building</i> , the <i>baseline building design</i> shall exclude them as well. When modeled, unmodified <i>existing building</i> components shall follow the same rules as new and modified <i>building</i> components.