



Healthcare | v2009

Optimize energy performance

EAc1 | Possible 24 points

Intent

To achieve increasing levels of energy performance beyond the prerequisite standard to reduce environmental and economic impacts associated with excessive energy use.

Requirements

Whole building energy simulation (1-24 points)

Demonstrate a percentage improvement in the proposed building performance rating compared with the baseline building performance rating. Calculate the baseline building performance according to Appendix G of ANSI/ASHRAE/IESNA Standard 90.1-2007 (with errata but without addenda¹) using a computer simulation model for the whole building project. Projects outside the U.S. may use a USGBC approved equivalent standard². The minimum energy cost savings percentage for each point threshold is as follows:

New Buildings	Existing Building Renovations	Points
12%	8%	1
14%	10%	2
16%	12%	3
18%	14%	5
20%	16%	7
22%	18%	9
24%	20%	11
26%	22%	13
28%	24%	14
30%	26%	15
32%	28%	16
34%	30%	17
36%	32%	18
38%	34%	19
40%	36%	20
42%	38%	21
44%	40%	22
46%	42%	23
48%	44%	24

Appendix G of Standard 90.1-2007 requires that the energy analysis done for the building performance rating method include all the energy costs associated with the building project. To achieve points under this credit, the proposed design must meet the following criteria:

- Compliance with the mandatory provisions (Sections 5.4, 6.4, 7.4, 8.4, 9.4 and 10.4) in Standard 90.1-2007 (with errata but without addenda¹) or USGBC approved equivalent.
- Inclusion of all the energy costs within and associated with the building project.
- Comparison against a baseline building that complies with Appendix G of Standard 90.1-2007 (with

errata but without addenda¹) or USGBC approved equivalent. The default process energy cost is 25% of the total energy cost for the baseline building. If the building's process energy cost is less than 25% of the baseline building energy cost, the LEED submittal must include documentation substantiating that process energy inputs are appropriate.

For the purpose of this analysis, process energy is considered to include, but is not limited to, office and general miscellaneous equipment, computers, elevators and escalators, kitchen cooking and refrigeration, laundry washing and drying, lighting exempt from the lighting power allowance (e.g., lighting integral to medical equipment) and other (e.g., waterfall pumps).

Regulated (non-process) energy includes lighting (e.g., for the interior, parking garage, surface parking, façade, or building grounds, etc. except as noted above), heating, ventilating, and air conditioning (HVAC) (e.g., for space heating, space cooling, fans, pumps, toilet exhaust, parking garage ventilation, kitchen hood exhaust, etc.), and service water heating for domestic or space heating purposes.

For this credit, process loads must be identical for both the baseline building performance rating and the proposed building performance rating. However, project teams may follow the exceptional calculation method (ANSI/ASHRAE/IESNA Standard 90.1-2007 G2.5) or USGBC approved equivalent to document measures that reduce process loads.

Documentation of process load energy savings must include a list of the assumptions made for both the base and proposed design, and theoretical or empirical information supporting these assumptions.

Projects in California may use Title 24-2005, Part 6 in place of ANSI/ASHRAE/IESNA Standard 90.1-2007 for Option 1.

¹Project teams wishing to use ASHRAE approved addenda for the purposes of this prerequisite may do so at their discretion. Addenda must be applied consistently across all LEED credits.

² Projects outside the U.S. may use an alternative standard to ANSI/ASHRAE/IESNA Standard 90.1-2007 if it is approved by USGBC as an equivalent standard using the process identified in the LEED 2009 Green Building Design and Construction Global ACP Reference Guide Supplement.