

Advancing Net Zero Snapshot: United States



Context

Residential and commercial buildings account for roughly 29 percent of total U.S. greenhouse gas emissions. For more than two decades, LEED has provided a framework for high performance buildings and spaces and to reduce greenhouse gas emissions. Building on that work, USGBC has developed LEED Zero, a certification complement to LEED that verifies the achievement of net zero goals in four categories: carbon, energy, water and waste. It encourages a holistic approach for buildings and places in recognition of the critical role buildings play in accelerating the transition to a low-carbon society and enhancing the health of natural and human ecosystems.



1. Measure and Disclose Carbon

Projects must provide 12 months of performance data for LEED Zero Carbon or LEED Zero Energy, demonstrating a carbon dioxide equivalent (CO₂e) balance of zero, or a source energy use balance of zero respectively.



2. Reduce Energy Demand

Projects pursuing LEED Zero Carbon or LEED Zero Energy are required to achieve enhanced levels of energy efficiency beyond code requirements as part of base LEED certification.



3. Generate Balance from Renewables

LEED Zero Carbon and LEED Zero Energy projects should follow a hierarchy for selecting renewable energy sources: on-site generation; local generation, such as community solar or wind; other offsite generation projects such as virtual PPAs; energy attribute certificates (EACs).

For LEED Zero Carbon, the carbon avoided is based on the carbon intensity of the grid receiving renewable energy; and may also include certified carbon offsets.



4. Improve Verification and Rigour

LEED Zero Carbon scope addresses emissions from energy generation, consumption and occupant transportation. LEED rating systems provide prerequisites and credits for strategies that reduce operations and construction phase emissions, including refrigerant management, whole building life-cycle assessment, and multimodal transportation planning.

Projects can go further to reduce resource use with LEED Zero Water or LEED Zero Waste.

Methodology and Verification

- Projects must be LEED certified under the BD+C or O+M rating systems.
- Projects submit performance data required for the desired certification to GBCI through LEED Online.
- Projects must provide data for 12 months in order to gain certification and re-submit every three years to maintain certification.

Additional Information

- For required calculations explanations please refer to the LEED Zero Program Guide.
- Carbon emissions from occupant transportation and building energy consumption can be calculated using the Arc platform.

Find out more

- [LEED Zero Program Guide](#)
- [Education at USGBC](#)
- [Arc platform](#)
- [WorldGBC's Advancing Net Zero global project](#)
- [Contact USGBC: leedzero@usgbc.org](mailto:leedzero@usgbc.org)

Pathway: Certification

Launch date: November 2018

LEED Zero

LEED Zero Carbon recognises buildings operating with net zero carbon emissions over the course of the past year. This certification provides a transparent accounting of the balance of carbon caused from energy consumption and occupant transportation, to carbon emissions avoided or offset. In future it will expand to incorporate carbon emissions from water consumption, waste generation, and the embodied carbon of materials used into the carbon balance. To obtain LEED Zero Carbon certification, a project must achieve a carbon-dioxide equivalent (CO₂e) balance of zero:

$$\text{Carbon Balance} = \text{Total Carbon Caused} - \text{Total Carbon Avoided}$$

LEED Zero Energy recognises buildings that achieve a source energy use balance of zero for the past year. The net zero energy balance is based on the quantity of energy consumed and the quantity of energy generated by the project.

$$\text{Source Energy Balance} = \text{Total Energy Consumed} - \text{Total Energy Generated On-Site or Procured Off-Site}$$

GBC Definition

A net zero carbon building is a highly efficient building that achieves a zero balance of carbon emissions emitted to carbon avoided during operations.

Advancing Net Zero

WorldGBC's global project to accelerate uptake of net zero carbon buildings to 100% by 2050. These snapshots outline specific GBC action, and how it relates to the project framework, including the four key principles shown left.