Zero energy building meaning

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Thousands of project teams throughout the country seek to push the envelope and develop zero energy buildings. Generally speaking, a zero energy building produces enough renewable energy to meet its own annual energy consumption requirements, thereby reducing the use of nonrenewable energy in the building sector. This definition also applies to campuses, portfolios, and communities. In addition to providing clarity across the industry, this publication provides guidelines for measurement and implementation, specifically explaining how to utilize this definition for building projects.

There are a range of terms used to describe buildings that are on a path to Net Zero. As WorldGBC’s vision calls for total decarbonisation for the built environment, we call the industry to adopt the whole life carbon approach that addresses emissions from operational energy use in buildings, and the embodied carbon which comes from the building materials and construction or renovation processes.

In new building developments, maximum embodied carbon reductions should seek to achieve, for example by choosing to renovate existing buildings or through building material selection. If the remaining residual emissions from embodied carbon and any remaining fossil-fuel use within the building during the operational stage are compensated for, for example through the use of offsets, the building asset is net zero whole life carbon.

WorldGBC recognises the role of offsets as part of the transition towards total sector decarbonisation that also enables tangible environment and social co-benefits in support of the Sustainable Development Goals.

At an entity level, and as per the Science Based Targets Initiative"s Net Zero Standard published in 2021, total emissions for an entire company"s carbon footprint should be reduced by 90% and the remaining offset by carbon removal projects, in order to classify as net zero.

It requires innovative design approaches focused on optimising performance, and collaboration across the entire project team. By reducing reliance on fossil fuels, buildings achieving these high performance classifications, with energy and carbon budgets verified based on actual consumption data, are therefore Advancing Net Zero.

WASHINGTON, DC- Todaythe U.S. Department of Energy (DOE) reached a significant milestone in bringing the building community together by releasing a common definition for a zero energy building, or what is also referred to as a "net zero energy" or "zero net energy" building.

"Reducing energy use in buildings must be a major part of the solution as we work to combat the escalating costs and impacts of climate change," said Brendan Owens, chief engineer at the U.S. Green Building Council, which represents more than 13,000 member businesses and organizations from across the building

community.

"While we are making significant progress to save energy in buildings, this Zero Energy Building definition developed by DOE helps increase expectations and orient the buildings industry towards even greater achievements. USGBC applauds DOE"s effort to define zero energy buildings and we look forward to continuing to champion the cause of building efficiency and renewable energy applications to meet the ambitious goals of this definition," Owens continued.

"NIBS and USDOE have created a set of clear and concise definitions for zero energy buildings that will help to narrow the broad array of terminology currently used in the industry," said Ralph DiNola, CEO of New Buildings Institute.

DiNola added, "These consistent definitions will contribute to the growth of zero energy building construction across this country. NBI supports the definitions as a federal position and will promote this effort through the work we do leading programs, practices and policies to get to zero across North America."

Generally speaking, a zero energy building produces enough renewable energy to meet its own annual energy consumption requirements, thereby reducing the use of non-renewable energy in the building sector. There are a number of long-term advantages of buildings meeting this goal, including lower environmental impacts, lower operating and maintenance costs, better resilience to power outages and natural disasters, and improved energy security.