DOE Releases Common Definition for Zero Energy Buildings, Campuses, and Communities

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WASHINGTON, DC – Today the 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.

After leading an extensive stakeholder engagement process over the past year and a half, the Energy Department released its findings in the recently published ***A Common Definition for Zero Energy Buildings***, which states that a Zero Energy Building is “an energy-efficient building where, on a source energy basis, the actual annual delivered energy is less than or equal to the on-site renewable exported energy.” This definition also applies to campuses, portfolios, and communities. In addition to providing clarity across the industry, this new DOE publication provides important guidelines for measurement and implementation, specifically explaining how to utilize this definition for building projects.

> *"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.

In collaboration with the National Institute of Building Sciences (NIBS), DOE initiated a process last year to work with a large, diverse set of building industry stakeholders to develop its common definition for what it means to be a zero energy building. Thousands of project teams throughout the country are looking to push the envelope and achieve a zero energy building. In fact, the number of zero energy buildings doubled from 2012 to 2014 across 36 states, according to the New Buildings Institute. The growth of zero energy buildings has highlighted a lack of clarity and consistency across the industry on key definitional issues that increasingly were the source of market confusion, underscoring the need for DOE to help develop a commonly accepted definition and approach.

> *"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.

> *"We applaud the Department of Energy's continuing work to promote buildings that use less energy. For more than 150 years,*

> *AIA-member architects have worked to advance our quality of life through design," said Elizabeth Chu Richter, FAIA, president of the American Institute of Architects (AIA).*

"From designing the next generation of energy-saving buildings to making our communities healthier and more vibrant, the 86,000 members of the AIA shape our future through their work. The quality of this future is wholly dependent on sustainable, resilient buildings that reduce the nation's reliance on non-renewable energy sources. That is why the Department of Energy's work is vitally important to the industry and nation as a whole," Richter continued.

Reducing building energy consumption in new building construction or renovation can be accomplished through various means, including integrated design, energy efficiency retrofits, reduced plug loads and energy conservation programs. Reduced energy consumption makes it simpler and less expensive to meet the building's energy needs with renewable sources of energy. By clarifying what it means to be a zero energy building, this definition will help more building owners determine if developing a zero energy building is right for them. By creating this common definition for zero energy buildings, building owners and project teams can now better focus their effort on implementing strategies to improve the performance of their buildings.

> *"The National Association of State Energy Officials (NASEO) commends the Department for taking this critically important step to help define Zero Net Energy," said David Terry, executive director of National Association of State Energy Officials (NASEO).*

Terry added, "For too long, uncertainty in the market place around this issue has been a barrier to many private and state efforts in the move toward Zero Net Energy buildings. This action supports existing state energy office efforts which have resulted in Zero Net Energy schools in

Kentucky, state office buildings in Iowa, and new homes in many states. Providing standard definitions will help states and private sector partners expand the pace of Zero Net Energy construction."

> *"IBPSA-USA welcomes the development of this industry-standard definition for zero energy buildings," said Mike Wilson, Executive Director of IBPSA, the US Affiliate of the International Building Performance and Simulation Association.*

"We intend to promote the use of this definition by IBPSA-USA members, who play a vital role in the development of successful zero energy buildings through the application of building performance simulation," Wilson continued.

> *"For one hundred and twenty one years ASHRAE has been a national and global leader in standards development that fulfills our mission of serving humanity and promoting a sustainable world. We commend the Department of Energy on its efforts to seek consensus on the issue of energy efficiency in the built environment." says David Underwood, president of ASHRAE.*

Underwood continued, "The 53,000 world-wide members of ASHRAE have diverse interests in how to approach Zero Energy Buildings but all share a desire to move this goal forward. This definition of Zero Energy Buildings will certainly become one of the tools used by the world-wide marketplace to move towards a sustainable future."

Office of Energy Efficiency & Renewable Energy
Forrestal Building
1000 Independence Avenue, SW
Washington, DC 20585