

2014 Getting to Zero Status Update

Media Resources

January 2014

By the numbers:

- The number of buildings achieving ZNE has more than doubled in just two years
- There are 33 verified ZNE projects (32 buildings and one district)
- 24% of ZNE buildings are renovations
- 36% of all ZNE buildings are education facilities
- 16 ZNE buildings are over 100,000 square feet
- 26% of ZNE buildings and districts are privately owned

Major report findings

- **ZNE is achievable in all regions and climate zones:** ZNE buildings exist in 36 states and two Canadian provinces covering all eight U.S. Department of Energy climate zones.
- **ZNE works for many building types and sizes:** The 2014 report includes a wide diversity of building types, including K-12 schools, universities and offices.
- **ZNE districts are a growing trend:** NBI identified 18 ZNE districts in the report, with the U.S. Army and several universities as the leading entities.
- **Private sector increase in ZNE development:** 26% of the verified ZNE and ZNE emerging buildings on this year's list were privately developed.
- **ZNE is achievable in existing buildings:** 24% of the verified ZNE buildings in the report were renovation projects, showing that ZNE is not limited to new construction.
- **Large share of ZNE projects are education buildings:** Consistent with the last report, education buildings such as K-12 schools and universities, make up the single largest category in this year's report at over 1/3 of all ZNE buildings.

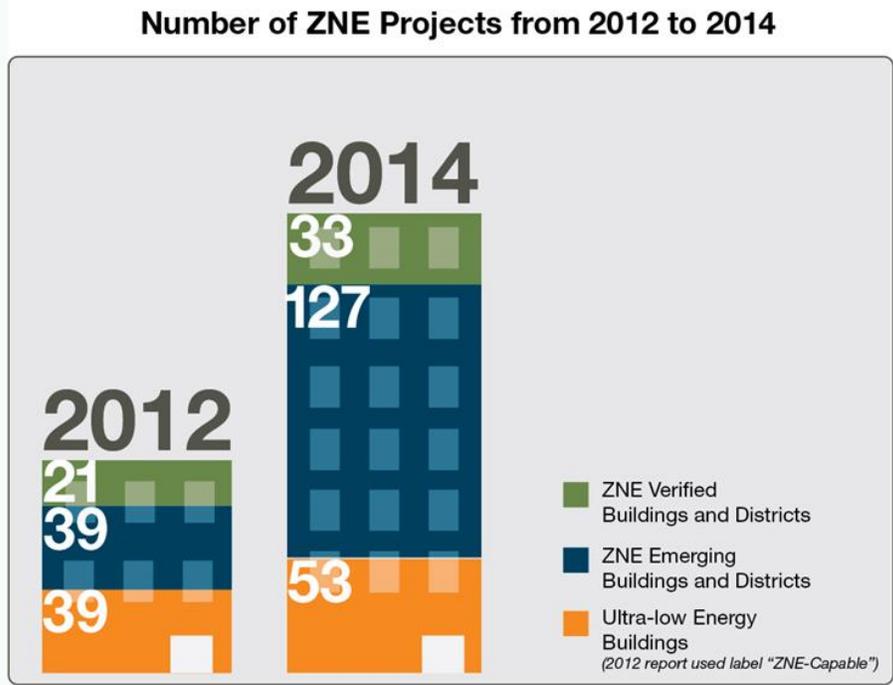
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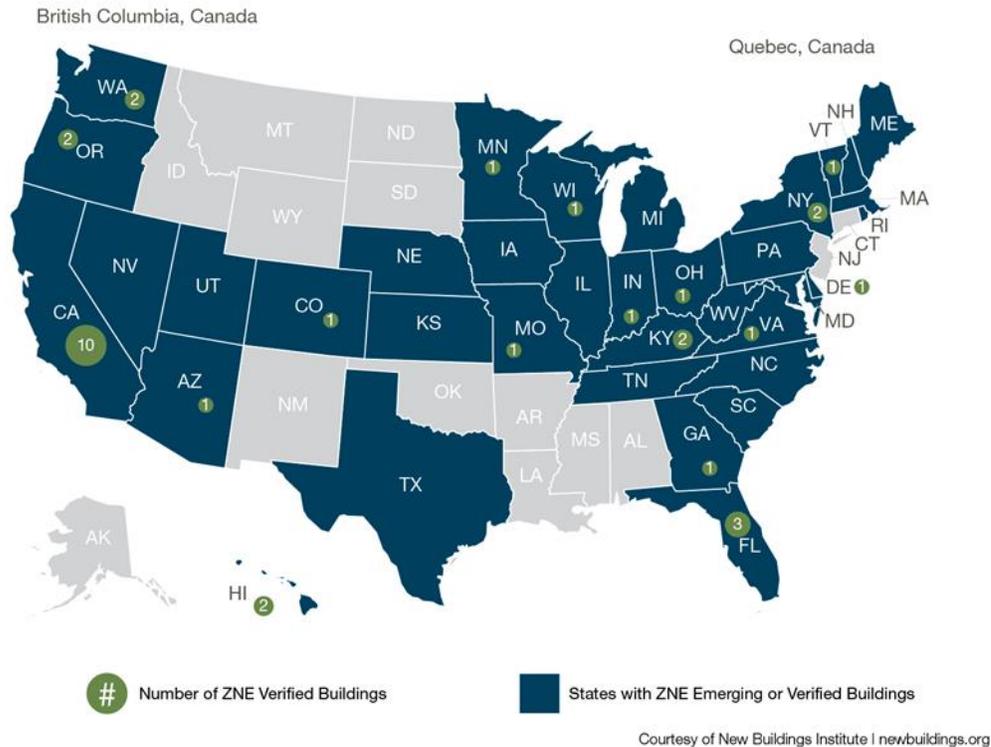
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Graphics you can use:



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Locations of ZNE Buildings and Districts



All report graphics and a number of building photos are available at www.newbuildings.org/2014-zne-graphics or by contacting Connie Umphress at NBI, connie@newbuildings.org

Building Profiles: See how some buildings have achieved ZNE

Anna Maria Historic Green Village, Anna Maria Island, FL

This ZNE District in Florida includes four 100-year old buildings that were renovated and with solar technology is saving \$11,500 per year.

Turkey Foot Middle School, Edgewood, KY

Turkey Foot is revolutionizing the way kids learn, all in a school that uses half the energy of the previous school, despite doubling the size.

To read about these and other case studies, visit www.newbuildings.org/2014-zne-update.

Frequently Asked Questions

What is a ZNE verified building?

NBI's ZNE definition is 100% of the building's energy use can be met with onsite renewable energy technologies. The ZNE report is the result of an extensive search and is currently the most comprehensive list publicly available.

What does "ZNE emerging," "ZNE districts" and "ultra- low energy" mean?

ZNE emerging buildings (or districts) have a publicly stated goal of ZNE but do not yet meet the definition of ZNE verified. These may be in planning, design, under construction or have been in operation for less than a year. Others may have been operating longer, but their measured energy has yet to achieve net zero, or the measured data to document ZNE verified status was not available for this study.

ZNE districts are groups of buildings such as a city district, community or campus with a stated goal of ZNE. They might be verified or emerging according to the definitions above and are counted as a single project for purposes of this study.

Ultra-low energy buildings have energy performance, design, technologies and operating practices that are comparable to get to zero energy. The objective of showing ultra-low energy buildings in the report is to show ZNE trends.

What keeps an 'Emerging' building from becoming ZNE Verified?

There are many variables beyond the design that impact the ability for a building to achieve a net zero performance outcome over the course of a year. These include the availability of data, occupancy, weather, operations, renewables performance and metering issues. Achieving ZNE is feasible, but not necessarily easy especially since operations—an area with many variables and outside the design purview—is a major factor in controlling energy consumption.

How long can a building be listed as 'emerging' without achieving a ZNE verified status?

At this time NBI is not removing projects from the emerging list. There are lessons to be learned from the older buildings that have been unable to get to zero. There

are also older projects on the emerging list that have not provided updated data for this study and may have achieved ZNE at some period since construction. Going forward, NBI will set time limits and methods to assess actual status for the next Getting to Zero Status Update report.

What about buildings that have identified a target of zero net electric? If they have other fuels (ie gas) do they meet your definition of ZNE?

No, NBI's ZNE definition is 100% of the buildings energy use can be met with onsite renewable energy technologies. NBI's ZNE verification for this study does not restrict gas or other fuels but required that all fuels are accounted for in the whole building energy total (EUI).

Why are the characteristics of the 53 ultra-low energy verified buildings not included in the study analysis?

Appendix B includes lists of buildings that have achieved ultra-low energy performance. These buildings have energy performance, design, technologies and operating practices that are comparable to get to zero energy. The objective of the analysis figures in the report is to show ZNE trends.

Verified ultra-low energy buildings are combined with ZNE verified as well as ZNE emerging with energy performance data to expand the data set for analysis. This is seen by NBI is critical due to the lack of actual measured performance data available in the industry.

Are your lists comprehensive?

There are undoubtedly ZNE projects that were not identified. One objective of the NBI's ZNE work is to draw attention to best practices and outcomes for others to replicate and to solicit additional project information. The ZNE lists are the results of an extensive search and are currently the most comprehensive list publicly available. The ultra-low energy list is shown to reflect comparable buildings and does not represent an extensive research effort to identify a comprehensive list. Years of utility and green building programs that preceded zero net energy efforts have resulted in many low energy buildings, just a few with published energy performance data.

NBI hosts a registry where ZNE and ultra-low energy buildings can self-identify for NBI review and inclusion on our lists at: <http://newbuildings.org/share>

What is the threshold for ultra-low energy buildings energy performance?

NBI did not set an absolute threshold EUI, rather the building's EUI is "comparable to ZNE buildings of its type." To be ZNE comparable for offices, for example, the ultra-low energy buildings use approximately 30% of the energy (60% less than) a standard office building (ie: most ZNE offices have an EUI of < 30 versus 93 for CBECS). Larger buildings and building types (laboratory, retail, museum etc.) vary widely so the research team used broad sets of comparables from CBECS, CEUS and NBI's database along with professional interpretation to determine the buildings performance is "ultra-low."

Who is NBI?

New Buildings Institute (NBI) is a nonprofit organization working to improve the energy performance of commercial buildings. NBI works collaboratively with governments, utilities, energy efficiency advocates and building professionals to remove barriers to energy efficiency, including promoting advanced design practices, improved technologies, public policies and programs that improve energy efficiency.

NBI is working to achieve net-zero energy buildings—those that meet all power needs through renewable resources. NBI staff currently provides the policy and program direction and promotes design practices and technologies that will result in buildings that are better for people and the environment.

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