

Zero Net Energy

Definition

A zero net energy (ZNE) building is a building with zero net energy consumption, meaning the total amount of energy used by the building is equal to the amount of energy created on site on an annual basis (typically with solar PV panels for residential units).

Energy Conservation and Energy Harvesting

The best path to achieve ZNE is to incorporate energy efficiency early in the design process for new construction, or retrofit energy efficiency measures for existing structures, before installing renewable energy systems. This allows for greater flexibility when planning the size of the renewable system accounting for the energy budget.

Planning for the Future

The State of California has proposed that all new residential buildings be designed and constructed to ZNE standards beginning in 2020.

Traits of ZNE

- Buildings that pay for themselves.
- Higher resale value.
- ZNE property owners are insulated from rising electricity rates.

Zero Net Carbon Conversion

ZNE buildings are well positioned to convert to zero net carbon by converting gas-powered appliances to electric. Examples of those fuel switching technologies include electric heat pumps (for heating the home) and induction cooktops.

Resources

New Buildings Institute
newbuildings.org/hubs/zero-net-energy



Photo: The West Berkeley Public Library has achieved ZNE status.