

# ZNE for Homeowners & Homebuyers

***A ZNE building produces as much energy as it consumes over the course of a year***

Today home buyers and owners have more options for a healthy, comfortable and affordable home that reflects their values. Zero net energy (ZNE) homes are utility grid connected homes that are designed and operated so efficiently that they are able to produce as much energy as they need to operate on an annual basis with clean, renewable energy. ZNE homes help reduce emissions, while lowering operational and maintenance costs, providing homeowners with a greater peace of mind.

- ZNE homes operate with maximum efficiency and include renewable energy production, typically using roof-mounted photovoltaic systems. Many use passive design strategies such as natural ventilation and daylighting, making them more comfortable and healthier overall.
- ZNE homes are higher performing, more resilient to the impacts of extreme weather events and less vulnerable to the instability of energy prices.
- ZNE homes have a higher resale value as the top-tier option for home buyers. With significantly lower monthly

utility costs, owners experience an improved net cash flow. Over a 15-year period, a traditional home will cost the owner \$298,798 in



zHomes | Issaquah, WA Photo: Ichijo USA

mortgage, utilities and other operating costs. However, over the same period, a ZNE home will cost \$273,420. That is a savings of over \$25,000! Homes in areas with high electricity rates will experience even more savings. ZNE homes are a good idea for homebuyers today. In California, incentives are high and may decline in the future. Buyers can also take advantage of historically low interest rates to invest in ZNE now.

- Investment in ZNE practices and technologies creates local jobs that strengthen local economies and communities and helps us gain control of our energy future. By investing in a ZNE home, you can demonstrate leadership in clean energy in California.

## PROJECT PROFILE: The Cottle Zero Energy Home | San Jose, CA



Cottle Zero Energy Home | San Jose, CA  
Photo: One Sky Homes

Recognized as the first net zero energy home in California, the “Cottle Home” is a two-story, 3,200 square-foot 4 bedroom/3.5

bathroom new construction project. This traditional-style features cut veneer stone and reclaimed timber front porch columns. The home’s energy-saving design features include:

- Triple-pane glass on all windows to prevent heat loss in the winter
- A sensor-controlled ventilation system that uses night ventilation cooling to cool and flush out hot air in the warmer months.

- A 6.4-kW, 30-panel, roof-mounted PV system and a three panel solar thermal system for heating water.
- Water conserving plumbing features and a grey water recycling system that supplies 80% of the homes irrigation needs.

The home was built by Allen Gilliland, owner/founder of One Sky Homes. The incremental costs of building the home to [the Passive House standard](#) was \$65,000, which is only 7% higher than that of a house built to code-minimum standards. With a HERS Rating of -1, the owners, Bill and Michelle Wong are able to supply all of their own energy needs (including charging their electric vehicle). The house generates enough energy to power itself for free as well as exports 2,000 kWh back to the utility at 28 cents per hour during peak demand times. This saves them approximately \$2,900 a year compared to owners of a standard code compliant home.

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## FAQs

### Is it expensive to make my home ZNE?

Recent studies have indicated that the efficiency components of a new ZNE home have an incremental cost after incentives of just \$2-\$8 per square foot. Custom home builders who are developing ZNE homes right now indicate that there are nominal additional costs and that the key issue to achieve ZNE is design and quality construction. As the market continues to grow, the availability of trained developers and designers continues to increase, making ZNE homes more available and cost competitive.

### Is there help to pay for a ZNE home?

There are incentives available through utilities and state renewable energy programs to help offset ZNE design, planning, research and construction costs. Programs such as California Advanced Homes and New Solar Homes Partnership provide technical assistance and incentives for ZNE homes.

### What is the difference between a ZNE home and a “ZNE-ready home?”

A ZNE home includes a grid-tied renewable energy system that will produce as least as much energy as the home consumes in the course of a year. A ZNE-ready home is a high performance home that is designed and built with the same energy efficiency features as a ZNE home, but does not include a renewable energy system. In many cases, a renewable energy system can be added in the future to meet all of its annual energy consumption.

## Resources:

- Zero Energy Project – Resources for Zero Energy Homeowners, builders/renovators, buyers and sellers: [zeroenergyproject.org/](http://zeroenergyproject.org/)
- The Home Energy Rating System (HERS) Index: [resnet.us/hers-index](http://resnet.us/hers-index)
- DOE Zero Energy Ready Home: [energy.gov/eere/buildings/zero-energy-ready-home](http://energy.gov/eere/buildings/zero-energy-ready-home)
- California Residential ZNE Action Plan: [californiaznehomes.com/](http://californiaznehomes.com/)
- Savings by Design Incentives: [savingsbydesign.com/zero-net-energy-zne-resources](http://savingsbydesign.com/zero-net-energy-zne-resources)
- Energy Design Resources: [energydesignresources.com](http://energydesignresources.com)
- ZNE Communications Toolkit: [newbuildings.org/resource/zero-net-energy-communications-toolkit/](http://newbuildings.org/resource/zero-net-energy-communications-toolkit/)

### How do I know that a home is ZNE or ZNE ready?

A ZNE or ZNE ready home is typically certified by a third party organization. Look for certifications like the Department of Energy’s Zero Energy Ready Certification, the Living Building Challenge Zero Energy Certification, Passive House Certification and Earth Advantage’s Zero Energy and Zero Energy Ready Certifications (linked below). Independent energy consultants can also provide third-party verification of zero energy home performance.

### How can I make my home ZNE?

Almost any home can be designed or renovated to become ZNE with the proper upgrades. To find a ZNE homebuilder, consult the Zero Energy Project Homebuilders List where you can find experts in the field available in your area. The Home Energy Rating System (HERS) Index evaluates the energy efficiency of your home and is a great way to get started towards ZNE. The targeted HERS Score can give you a better understanding of how energy efficient your home will be.

### Why is it important to make homes ZNE?

Energy efficiency improvements in building design and operations substantially reduce the costs and environmental impacts associated with buildings. The energy used in buildings is the second largest contributor to California’s greenhouse gas (GHG) emissions. With rising energy costs, and increasing climate-related impacts and natural disasters, ZNE buildings help reduce our demand for energy and provide more resilient spaces to respond to climate impacts.