

New Residential Zero Net Energy Action Plan Workshop

Workshop

October 1, 2013

1:00pm – 4:00pm



Local
Government
Commission

Statewide Energy Efficiency Collaborative

AN ALLIANCE TO SUPPORT LOCAL GOVERNMENT

- The Statewide Energy Efficiency Collaborative (SEEC) is an alliance to help cities and counties reduce greenhouse gas emissions and save energy. SEEC is a collaboration between three statewide non-profit organizations and California's four Investor Owned Utilities.





California's New Residential ZNE Action Plan

Statewide Energy Efficiency Collaborative Webcast

October 1, 2013 | 1:00 – 4:00 pm

California Long-Term Energy Efficiency Strategic Plan – Bold Goals . . .

All new
residential
construction
in California
will be ZNE
by 2020

50% of
existing
buildings will
be retrofit to
ZNE
by 2030

All new
commercial
construction
will be ZNE
by 2030

Goal 1. Deliver Zero Net Energy New Homes by 2020

“Goal 1 envisions a continual and dramatic increase in the demand for and supply of lower energy homes based on **new technologies, new building principles, and policy support...**”

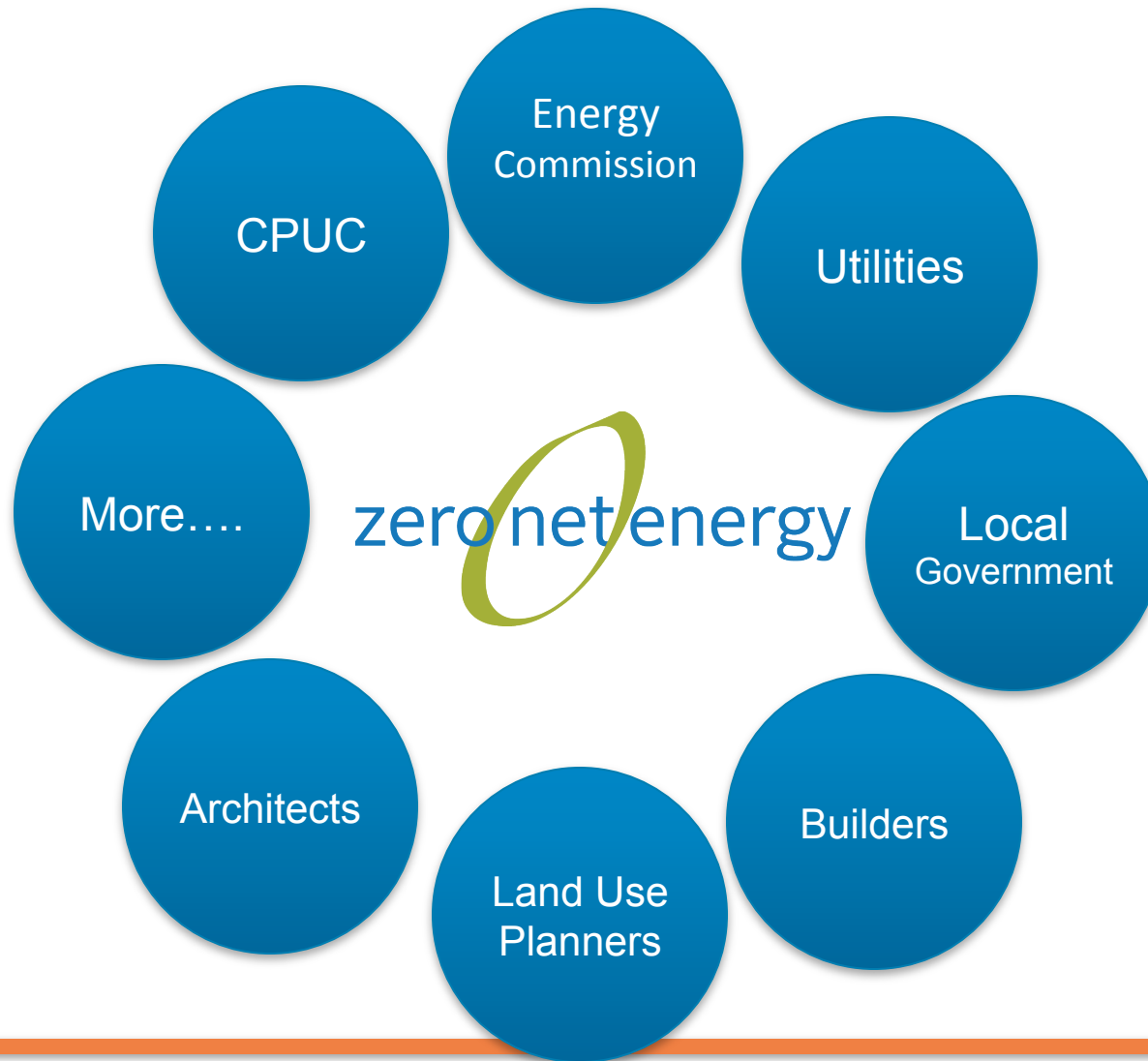
What does it mean for California to go ZNE?

- AB 32 – Required Substantial Reductions in Greenhouse Gas Emissions
- Market Transformation !
- Sustained, long-term approach
- Broader engagement and activation of the market
- A new way to work!



“The state and nation must be aggressive about setting goals, such as having zero-net-energy residential buildings by 2020 and commercial buildings by 2030.”

Who is involved in reaching this goal?





Energy Commission Activities

- Energy Commission adopts 2013 Title 24 residential energy building code (2012)
- Title 24 (2013) requires new buildings to be . . .
 - Single family homes 25% more efficient
 - Multifamily buildings 14% more efficient
 - Required to be cost-effective for building owners
- Recent E3 study reviewing cost-effectiveness of PV systems on new homes
- New Solar Homes Partnership Incentives
- AB 758 and HERs

Public Utilities Commission Activities



- Preparing ZNE New Residential Action Plan
- Updating California Strategic Plan in 2014
- Funding Regional Energy Network Pilots and Local Government Programs, including “Reach Code” technical support from IOUs
- Adopted performance based incentive for new homes (2010)
 - Implementing Title 24 Code Preparation \$1000 Kicker (2013)
 - Moving to Energy Use Intensity (EUI)- based incentives in 2014
- Support for Title 24 code CASE studies
- Contractor education courses – how to build to ZNE
- Various ZNE homes pilots and technology trials via ZNE, Sustainable Communities and emerging technologies programs

What is a Zero Net Energy (ZNE) home?

- A ZNE building is highly efficient and produces as much energy through clean, renewable resources as it consumes over the course of a typical year.
- Addresses electricity, gas and water to reduce overall emissions
- Likely multiple levels of ZNE: from achieving code to 100% site renewables



Benefits. . .

- ZNE homes are **higher performing, more resilient** to climate impacts and less vulnerable to instability of energy prices
- ZNE homes are **more comfortable and healthier**
- Investment in ZNE practices and technologies **creates local jobs and new products** that can be exported worldwide, strengthens local economies, and helps us gain control of our energy future
- Turns a structure into **a financial asset with lower bills and higher value**

Developing Residential ZNE Action Plan

- Developing a foundation and a guide to ensure we can meet the goals
- Extensive stakeholder engagement
- Interagency work sessions
- Multidisciplinary Subcommittees
- Planning Website
www.CaliforniaZNEhomes.com



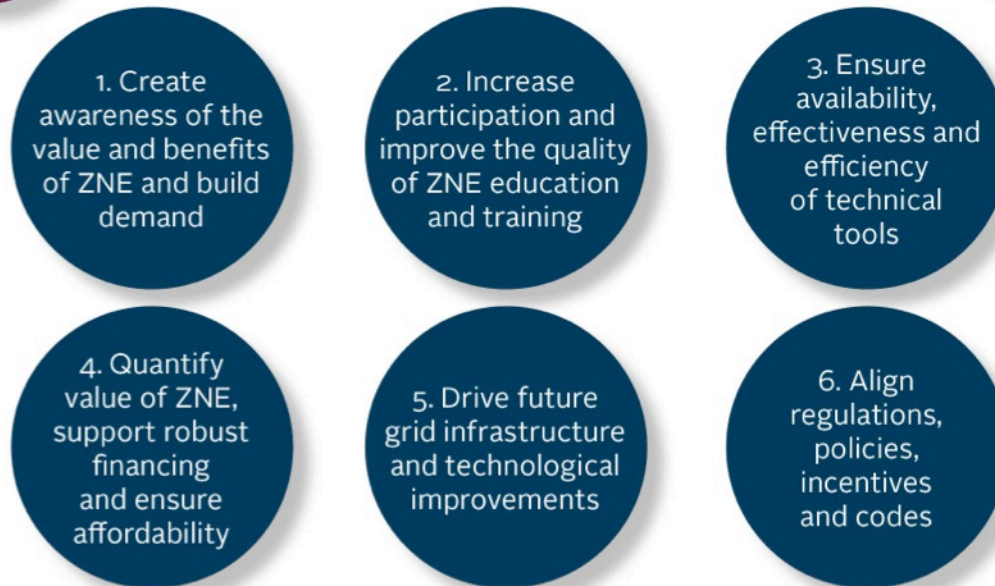
VISION

100% of all New Homes in California will be Zero Net Energy starting in 2020

GUIDING PRINCIPLES



ACTION PLAN GOALS



How does the plan specifically impact or provide opportunities for local governments?

Goal 1. Awareness and Build Demand

- Local and regional marketing activities to build awareness and interest (starting in 2014)
- Local Government resolutions to support ZNE building goals (starting in 2015)

Goal 2. Training and Education

- Require specific ZNE training for building inspectors and home inspectors by 2020
- Non-technical ZNE certifications and training programs for real estate agents/brokers, appraisers, and loan officers
- Third party ZNE training and education partnerships
- Hands on training for leading builders starting in 2015

Goal 3. Technical Tools

- End user management and communication tools
- Software to support labeling systems

Goal 4. Financing, Affordability and Value of ZNE

- Development of ZNE appraisal standards
- Advocate for legislation for ZNE appraisals
- Advocate for SAVE Act to incorporate utility costs and value of energy efficiency into mortgage calculations and home valuations
- Development of non-financial incentives to assist builders – i.e. streamlined permitting
- Update California home rating systems

Goal 5. Future Infrastructure

- Support ZNE policies that promote decarbonization of the energy supply and supports AB 32 and greenhouse gas reductions
- Ensure that local government policies, planning, urban design and zoning laws and regulations support ZNE for on-site renewables as well as community-scale renewables by 2015

Goal 6. Alignment

- Work together to create a statewide, streamlined, transparent and consistent process for policies, plans and procedures related to ZNE building development and construction
- Provide tools and model policies for local jurisdictions to encourage adoption of ZNE policies
- Encourage local government adoption of ZNE “Reach Codes” by 2017

Break out group questions. . .

1. What are the challenges and opportunities that this 2020 ZNE goal offers to Local Government?
2. What is the 2020 ZNE Goal's impact on existing Local Government plans and programs?
3. What do you see as Local Government's role in reaching the 2020 goal?

Next Steps

- October 22nd Workshop in Sacramento
- Incorporate comments and ideas in to next Plan Draft
- Additional consultation with Stakeholders and State Agencies
- Final Plan - end of 2013

ZNE EARLY ADOPTERS LEADERSHIP NETWORK

**CPUC-NBI-DGS public sector
workshops to support :**

- Local governments
- State agencies
- K-12 schools
- Higher Education




ZNE Early Adopters Leadership Network

- New public sector peer learning group
- Three training and education workshops, featuring:
 - Communication tools
 - Case Study examples & lessons learned
 - Process and Planning Frameworks to advance ZNE plans, policies and buildings
- Interested local governments should participate, utilities and public sector design consultants welcome
- ***Upcoming workshop:*** October 14th, 10 am-5 pm in Sacramento

To find out more: www.newbuildings.org/zero-net-energy-early-adopters

ZNE Communications Toolkit



Zero Net Energy
MESSAGE PLATFORM

Zero net energy (ZNE) buildings are becoming the new standard for achieving significant energy savings and reducing emissions in the built environment. California set an aggressive course for a new "zero finish line" knowing it will lead to the highest levels of efficiency in buildings, more reasonable energy generation, and less carbon emissions. Yet agencies understand that regulation alone will not get the state to its goals by 2020 and 2030. To advance ZNE adoption, effective communications are essential to help catalyze voluntary investment and innovation, and motivate building owners, buyers and developers to prioritize ZNE while mandatory codes and standards evolve.

"The two words information and communication are often used interchangeably, but they signify quite different things. Information is giving out; communication is getting through."
- Sydney Harris

ZNE Communications
This Message Platform presents strong, overarching core messages and supplemental supporting messages targeting key audiences. It will create the basis of how stakeholders talk about ZNE and is designed to help define ZNE buildings and demonstrate that ZNE is a tangible, achievable benchmark and the future of buildings in California.

energy upgrade CALIFORNIA

Non-commercial reproduction of this content or use in other materials is allowed. Please cite the source as: California ZNE Communications Toolkit, July 2017

Getting to ZNE

1 DESIGN PROCESS
Addressing systems through integrated design.

2 TECHNOLOGY
Daylight
Lighting
HVAC
Natural
HVAC
Renewable

Why Should Building Owners Go ZNE?

When committing to a high efficiency building, ZNE is the best business decision and adds the most value.

Leading by Example
Bacon St. Offices

- Reduce energy consumption
- Leverage existing infrastructure
- Decrease operational costs
- Improve occupant comfort

Former auto-repair shop turned architect's office.
1st commercial bldg. in SD to achieve ZNE usage.
Monitoring system tracks the actual use of building systems, and real world data for educating others.
All electrical systems designed to reduce energy loads by over 42,000 kWh per year.
Remaining energy is offset by renewable electrical and water heating energy located on the roof top.

REDUCE ENERGY CONSUMPTION
IMPROVE OCCUPANT COMFORT
LEVERAGE EXISTING INFRASTRUCTURE
DECREASE OPERATIONAL COSTS

55,972 Sq Ft
LEED Platinum

energy upgrade CALIFORNIA

Sample Presentation

ZNE Architecture & Engineering

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

The Value of ZNE Expertise
As sustainable design practices and goals are more commonly adopted by the architectural and engineering communities, designing for zero net energy (ZNE) goals offers firms and consultants an opportunity to distinguish themselves from the field.
Demonstrating the expertise needed to create ZNE-level performance signals a proficiency in the advanced technology application and design strategies needed to achieve this goal. This capability sets you apart from your peers and provides a high year-over-year benefit.
Incorporating ZNE expertise into your processes for future building requires continued efforts to hire qualified staff to hire buildings and enforce carbon emission goals.
The client will adopt the next level of net zero (Net Zero) in 2014 for all newly constructed residential construction by ZNE by 2020 connected by 2030. By committing to now, you will better position your business for the future.

Benefits of Delivering a ZNE Building
Elevate your firm from the rest by delivering buildings that combine the highest architectural, mechanical, and environmental performance.

Q1 / WHAT IS A ZERO NET ENERGY BUILDING?
A zero net energy building produces as much energy as it consumes over the course of a year. These buildings achieve ZNE through high levels of energy efficiency, and then through the addition of on-site renewable power generation.

Q2 / ARE ZNE BUILDINGS FEASIBLE?
Yes. While the number of ZNE buildings is still small, there are numerous examples around the country, built by a variety of design teams and developers, across many different residential and commercial building types.
Zero net energy building projects are located in most U.S. climates. Most climates—the tropics in California—certainly help make zero energy buildings more easily achievable, but successful projects have also been completed in the temperate climates of Minnesota, Massachusetts, and New York.
ZNE performance is frequently an added feature of LEED Gold and Platinum buildings that already have a strong energy efficiency design.

Q3 / WHAT ARE THE BENEFITS OF ZNE BUILDINGS?
• ZNE buildings and homes are higher performing, offering superior comfort and healthier spaces to work and live. Because ZNE buildings use passive strategies such as natural ventilation and daylighting, they are more resilient to the impacts of climate change, they are also less vulnerable to the instability of energy prices.
• California's homeowners and businesses will pay less for energy—money they can spend to grow the company or pay for necessities.

Q4 / WHY IS IT IMPORTANT TO MAKE BUILDINGS ZNE?
Energy efficiency improvements in 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.
ZNE buildings are an important strategy to help reduce GHG emissions to 1950 levels by 2020, a requirement of California's Global Warming Solutions Act of 2006. With rising energy costs, and increasing climate-related impacts and natural disasters, ZNE buildings help reduce our demand for energy and provide more resilience to climate impacts.

energy upgrade CALIFORNIA

Non-commercial reproduction of this content or use in other materials is allowed. Please cite the source as: California ZNE Communications Toolkit, July 2017

Message Platform

Fact Sheets

Drafts on NBI Website - www.newbuildings.org/zne-communications-toolkit

- 
- ZNE Project Profiles
 - News & Events
 - Policy & Planning Updates
 - Upcoming Training & Education
 - New Research
 - Low Energy Building Innovations

Topic 2

ZNE ACTION BULLETIN

Progress Towards Zero Net Energy Buildings

Email heather@newbuildings.org to sign up



Get involved or find out more:

Cathy Fogel, CPUC

cathleen.fogel@cpuc.ca.gov

Mindy Craig | 510-338-0373

BluePoint Planning

mindy@bluepointplanning.com

www.CaliforniaZNEhomes.com

