Zero Net Energy (ZNE):
What it is, why it is talked about so much & what local governments can do to help get there

May 21, 2014
Build It Green

- A non-profit with mission to achieve healthy & resource efficient homes
  - Establish and promote an attainable and credible green building program
  - Train professionals in green building
  - Work with local governments to create green building policy
What Is GreenPoint Rated?

- Green home certification system: New & Existing
- Third-party verified
- Awards points across 5 areas: energy, water, resources, indoor air quality, community
- 50 point minimum

Over 21,000 Rated projects completed, 17,000 more in the pipeline
What Are the Benefits?

- Credible
- Flexible
- Compatible
- Above Code
- Simple & Affordable
- Support System
- Value
<table>
<thead>
<tr>
<th>CA Code</th>
<th>GreenPoint Rated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Currently % better than Energy Code</td>
<td>Whole building energy use &amp; passive strategies</td>
</tr>
<tr>
<td>High efficiency fixtures</td>
<td>Include performance metrics for fixture</td>
</tr>
<tr>
<td>Range hood ventilation</td>
<td>Performance &amp; capture efficiency of range hood</td>
</tr>
<tr>
<td>50% waste diversion</td>
<td>Excluding ADC for water diversion</td>
</tr>
<tr>
<td>Accessibility</td>
<td>walkable</td>
</tr>
<tr>
<td>Livability - Services</td>
<td></td>
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Smart Solutions from the Ground Up
Regulatory and Market Based Systems

- **Role of Regulatory System**
  - Provides a baseline building code that raises the bar for the state, yet remains feasible to builders

- **Role of Market-based Certifications**
  - Clearly defined & vetted criteria
  - Prepares builders for future standards
  - Provides reach code standard
  - Awards higher performance
  - 3rd party verification
Key Issues for local ordinances

• Meet Local goals for green building, energy efficiency, climate mitigation, and AB 32
• Integrate need for regulation with need for innovative and higher performance goals
• Avoid duplicative and therefore “punitive” reporting mechanisms for builders using third party systems
• Award builders for higher than code performance through third-party systems
State Goals

- AB 32
- 80% 1990 GHG by 2050
- CPUC Strategic Plan
Getting to 60% below 1990 level

GHG Emissions (MtCO₂e/yr)

BUA

+ Efficiency
+ Electrification
+ Low-Carb Elec
+ Low-Carb Fuels

Carbon fuels
Electricity
2050 Target
Two Thresholds for GPR

- Near Zero Energy
  - 80% offset
  - Pathway to ZNE
- Zero Net Energy
  - 100% offset
  - All electric
  - Using Carbon as metric
Criteria and Metrics

- Energy Code must be achieved without Photovoltaics
- Estimate Annual Energy Use of Home
  - Outputs from code compliance for heating, cooling, DHW, and envelope loads
  - Calculations for additional end uses
- Site Energy
End Uses Included in Calculation

- Heating/Cooling DHW
- Hot Water Distribution
- Lighting - Int/Ext.
- Plug loads
- Appliances and Cooking
- Laundry
  - Differentiate in unit and central

[Pie chart showing energy use distribution: Space Heating 45%, Water Heating 18%, etc.]
Communicate Benefits

- ZNE designation
- Environmental savings from Climate Calculator
- Equivalencies make it easier to understand impact
- Projected annual cost savings for energy and water bills
Thank you!

Amy Dryden
Senior Program Manager

510.590.3360 x604
greenpointrated@builditgreen.org