Energy Codes and Solar—How They Fit Together, How We Move Forward Together

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Southwest Energy Codes Conference
November 4, 2016
We Partner to Build the New CLEAN ENERGY ECONOMY

STOP ENERGY WASTE
CREATE CLEAN ENERGY
BUILD A SMART ENERGY FUTURE

UTAH CLEAN ENERGY
Residential Energy Code Improvements

Source: Building Codes Assistance Project
Impact of Energy Codes Nationally (2010-2040)

- $126 billion energy cost savings
- 841 MMT of avoided CO$_2$ emissions
- 12.82 quads of primary energy

Equal to:
* 177 million cars
* 245 coal power plants
* 89 million homes

Solar cost decline in U.S.
Solar growth in Utah

1 MW 1 MW 2 MW 4 MW 9 MW 14 MW 28 MW 55 MW 140 MW*


* - Rocky Mountain Power Projection
Residential Solar is at Grid Parity!

Third-party ownership

3rd-Party Solar PV Power Purchase Agreements (PPAs)

- **Authorized by state or otherwise currently in use, at least in certain jurisdictions within the state**
- **Apparently disallowed by state or otherwise restricted by barriers**
- **Status unclear or unknown**

* Limited to certain sectors

Sources: Database of State Incentives for Renewable Energy & Efficiency and NREL (Feb. 2013)
**Have we maxed out efficiency in the energy code?**

<table>
<thead>
<tr>
<th>Climate Zone 5</th>
<th>2015 IECC</th>
<th>DOE Zero Energy Ready Home</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wall (R-value)</strong></td>
<td>20 or 13+5</td>
<td>20 or 13+5</td>
</tr>
<tr>
<td><strong>Ceiling (R-value)</strong></td>
<td>49</td>
<td>49</td>
</tr>
<tr>
<td><strong>Windows (U-factor)</strong></td>
<td>0.32</td>
<td>0.27</td>
</tr>
<tr>
<td><strong>Air tightness (ACH)</strong></td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td><strong>Efficient lighting</strong></td>
<td>75%</td>
<td>80%</td>
</tr>
<tr>
<td><strong>Heating equipment</strong></td>
<td>As proposed</td>
<td>94 AFUE</td>
</tr>
</tbody>
</table>

Sources: International Code Council; U.S. Department of Energy Zero Energy Ready program; Green Building Advisors, *Passivhaus For Beginners*
Energy Efficiency + Solar

More energy efficiency → Smaller solar project needed → Smaller solar projects cost less → More homes go solar
Thank you!

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