

The Role of Energy Saving Targets & Regulatory Measures in Renovation Policy Packages

A California Perspective



- Consulting ♦ Teaching ♦ Speaking ♦ Writing ♦ Advocacy
- Zero net energy + high performance design
 - Green building
 - Integrated project delivery / charrette facilitation
 - Capacity building



Background

- Statewide focus on efficiency since 1978
- 55% of housing predates 1978 (~7M units)
- Buildings 2nd largest contributor of greenhouse gasses in CA @ ~25%
- Improving existing building efficiency is the largest opportunity to reduce emissions
- In 2007, CA Energy Commission recommended 100% achievement of cost-effective energy efficiency



California's residential retrofitting targets

- **Assembly Bill 32, 2006: Global Warming Solutions Act**
 - 2020 greenhouse gas emissions capped at 1990 levels
- **Assembly Bill 758, 2009: Comprehensive Energy Efficiency Program for Existing Buildings**
 - Energy assessments
 - Building benchmarking
 - Energy rating
 - Cost-effective energy efficiency improvements
 - Public & private sector energy efficiency financing
 - Public outreach & education
 - Green workforce training

TARGETS DRIVE implementation:

- Policies
- Regulations
- Programs



Outcomes

- **Utility programs refocus:**
 - Whole-house approaches →
- **Home sales requirements:**
 - Point-of-sale energy rating & disclosure (HERS II)
- **\$20M workforce development program**
- **Property-assessed clean energy (PACE) financing pilots**
- **Residential retrofits must:**
 - replace noncompliant plumbing fixtures with water-conserving plumbing fixtures



CA 2013 energy
code (effective 1
July 2014)



Example: “Towards ZNE” Training

- **Four-day class series:**
 - Part 1: Overview – Retrofitting to Target Deep Energy Reductions / Zero Net Energy
 - Part 2: Retrofitting the Building Enclosure
 - Part 3: Retrofitting Mechanical Systems
 - Part 4: People & Plug Loads
- **Delivered in service territories across CA:**
 - San Francisco Bay Area, San Diego, Sacramento, Central Valley



Stakeholders

- **CA Energy Commission & Public Utilities Commission required to consult with:**
 - Department of Real Estate
 - Department of Housing & Urban Development
 - Utilities
 - Local governments
 - Real estate licensees, appraisers
 - Builders
 - Financial institutions
 - Environmental & environmental justice groups
 - Commercial property owners
 - Small businesses
 - Consumer groups



Building Sector Impacts

- Short-term effects:
 - New market opportunities
 - New training needed to take advantage
- Longer-term needs:
 - Get serious about energy efficiency
 - Focus on building capacity, not just compliance
 - Understand time-dependent valuation (TDV)
 - Learn new tools
 - Reexamine the toolkit



Lessons Learned

If at first you
don't succeed ...

- Energy Upgrade CA being retooled based on 1st round
 - Not enough money to induce retrofits based on incentives alone
 - Need to find ways to target “opportunistic remodeling”
- Educating the workforce is great ...
 - But there needs to be work for them to do!
- Create demand ahead of supply
 - Balance push/pull
- PACE and HERS II: too soon to say ...



Thank you!



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