

Residential Whole House Breakout Session: New Homes

**Examining Opportunities for Coordinated
Market Transformation in New Construction**



Working Together, Advancing Efficiency

Session Objectives and Agenda

- Develop shared understanding of common elements and unique aspects of new construction programs
- Provide forum for discussion among program managers
- Identify 1-3 potential market transformation strategies for new homes that could be pursued together at CEE

CEE 2008 Residential New Construction Program Summary

- 31 questions in questionnaire
- 26 responses to date
- Next steps
 - You can still submit!
 - Additional follow ups to clarify responses
 - Format and publish (targeting July)

Program Summary Participants

- Arizona Public Service
- Connecticut Light and Power
- Efficiency Maine
- Energy Trust of Oregon
- Focus on Energy (WI)
- Interstate Power and Light Co.
- Massachusetts New Homes with ENERGY STAR JMC (9 organizations)
- National Grid
- Nevada Power Company
- New Hampshire ENERGY STAR Homes Program (4 utilities)
- New Jersey's Clean Energy Program
- Northwest Energy Efficiency Alliance
- NYSERDA
- Oncor Electric Delivery
- Ontario Power Authority/
NRCan/EnerQuality
- Pacific Gas and Electric Co.
- Questar Gas Company
- Rocky Mountain Power
- SMUD
- San Diego Gas & Electric
- Seattle City Light
- Snohomish PUD
- Southern California Edison
- The United Illuminating Co.
- Vectren
- Xcel Energy



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General Goals

New Construction Programs

- Reduce energy and peak demand
- Accelerate incorporation of EE and produce permanent improvement in standard practices for design, construction and operation of residential buildings
- Increase consumer awareness and demand for EE homes
- Meet or exceed ENERGY STAR or building codes
- Raise builder awareness/increase number of builders participating
- Introduce new technologies
- Lock in efficiency through codes and standards



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Specific Energy Savings Goals

- Variety of reporting metrics
 - Annual kWh/Therm savings (most common metric)
 - Peak demand savings
 - Lifetime savings
 - Per unit energy savings
 - Energy use reduction over time (e.g., 20 percent by 2020)
 - Qualifying units built
- Little mention of water
- Highest annual savings goal: 9.1 million kWh (Oncor)
- Several programs have tied goals to future net zero energy

Barriers

- Downturn in housing market
- Rising building codes
- Maintaining a cost-effective program
- Lack of consumer demand
- Building a verification infrastructure
- Maximizing energy savings
- Fragmented markets

Planning and Budgets

- Typically annual cycle, some two, three, four years
- Annual program dollars
 - Smaller utilities mid-\$100k's
 - Typical budget appears to be \$1-4 million
 - Biggest budgets:
 - New Jersey CEP: \$17.5 million
 - Questar Gas Company: \$10.5 million
- Incentives substantial component of most budgets
 - Range 25% (WI)-83% (Interstate Power and Light)

Upstream vs. Downstream Focus

- Everyone has an upstream focus
- Many have both upstream and downstream
- Some mention an upstream focus with some consumer outreach
- Only Vectren indicated a primary downstream focus

Incentives

- All full programs offer incentives
 - In general, for both whole house and for individual measures; some for rating
 - Most incentives offered to builders; some to consumers
- Many programs offer tiered incentives
 - Mostly on performance path, based on HERS Index
 - Some tiers include prescriptive measures (e.g., Rocky Mountain Power)
- Largest incentives in NJ: \$2,800 per unit Tier 2

Relationship to ENERGY STAR

- Almost every respondent is an ENERGY STAR partner
- ENERGY STAR for Homes is the basic specification reference, though there are others (e.g., CA Title 24)

Program Qualification

- Most programs offer both a prescriptive and performance path
- Several programs require more stringent prescriptive measures:
 - Ventilation, HVAC systems and installation, room pressure balancing, lighting
- Several programs have a more stringent performance requirement
 - Percent above ENERGY STAR or higher HERS Index
 - Many address this as an option through tiering

Verification

- Almost every program uses HERS raters or other third party verification
- Two relatively small municipal utilities using prescriptive path use their own staff to verify
- Several programs report using QA measures to verify work of 3d party verifiers

Renewables

- Several programs include (e.g., SMUD SolarSmart, Vectren ground-source heat pumps)
- Some formally coordinate with funds established for renewables (e.g., MA)
- WI: Incentive for “renewable ready”
- A number of programs don’t link to renewables

Other Green Homes Programs

- Almost every program reported active green labeling programs in their markets
 - LEED, NAHB, local/regional programs
- Effect has generally been positive
 - Use ENERGY STAR as basic requirement (true for NAHB?)

Training and Education

- Most training is targeted to builders and trades
- Training also offered to:
 - Sales staff
 - Raters
 - Realtors
 - Mortgage lenders
 - HBAs
 - Vocational school students
 - Consumers
 - Efficiency program staff
- Training offered on site, in classrooms, at trade shows
- Training often offered in partnership (USGBC, Energy Centers)

Marketing

- Trade press
- Home shows
- Media advertisements: print, radio, TV
- Bill inserts
- Direct sales contacts
- HBA meetings
- Target audiences:
 - Builders/developers
 - Architects
 - Trades
 - Consumers

Financing

- Zero programs reported offering financing
- Has anyone considered offering financing?
 - Is there any opportunity here?

Other Program Elements

- Measurement, verification and evaluation
- Multifamily
- Modeling software
- Cost-benefit analysis

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Suggested Role for CEE

- Highlight program accomplishments and best practices
 - Program summary
- Provide discussion forum
 - Between programs
 - With industry?
- Develop consistent messaging for builders and for consumers to help drive demand
 - Promote ENERGY STAR
- Standardize specifications
 - Net zero energy
 - Tiered specifications
- Work to improve codes and increase tax credits



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