U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

DOE Zero Energy Ready Home

First Leading Rater Round Table Summary

March 2016

ZERO ENERGY READY HOME
U.S. DEPARTMENT OF ENERGY

Building America
U.S. Department of Energy

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DOE Zero Energy Ready Home

First Leading Rater Round Table Summary

February 28
Scottsdale, AZ

Prepared for

DOE Zero Energy Ready Home Program

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March 2016

Table of Contents

1 Round Table Meeting Information 1
1.1 Participants 1
1.2 Zero Energy Ready Home Staff 1
1.3 Purpose 1
1.4 Desired Outcomes 1
2 Round Table Agenda 2
3 Best Testimonials 3
4 Key Lessons Learned Promoting and Verifying Zero Energy Ready Homes 4
5 Key Challenges Moving Forward Engaging Builders with Zero Energy Ready Homes 6
6 What DOE Can Do Better Supporting HERS Raters with ZERH 9

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1 Round Table Meeting Information

1.1 Participants

- Brad Townsend, TopBuild Home Services
- David Horton, Green Building Consulting
- Galo Lebron, Energy Inspectors
- Justin Fertig, Energy Services Group
- Pasquale Strocchia, Integral Building and Design
- Steve Saunders, TexEnergy Solutions
- Thomas Cochran, Energy Inspectors

1.2 Zero Energy Ready Home Staff

- Sam Rashkin, U.S. Department of Energy
- Jamie Lyons, Newport Partners
- Joe Nebbia, Newport Partners

1.3 Purpose

A dramatic movement to zero energy ready homes is just beginning. This includes statewide codes, large developments, and a growing commitment to the DOE Zero Energy Ready Home program. Continued progress will rely on an increasing number of Home Energy Rating System (HERS) raters effectively bringing the business case, technical solutions, and verification services for Zero Energy Ready Home to our nation's builders. At this meeting, a select group of HERS raters will gather and share lessons-learned and key challenges moving forward moving the housing industry to high-performance homes.

DOE has held similar events with top executives from leading DOE Zero Energy Ready Home builders. These meetings provided a forum for these builders to work together to identify common needs, successful strategies, and other ideas. Similarly, the first DOE Zero Energy Ready Home Leading Rater Round Table meeting looked to glean feedback from the industry that often acts as the sales force for the program. Over this half-day meeting, interest was high in achieving solutions and in working together with DOE toward a common goal. This report documents the key results. DOE looks forward to working with a growing group of HERS raters in the coming year continuing the growth of Zero Energy Ready Home.

1.4 Desired Outcomes

- List of key lessons-learned by HERS raters promoting and verifying Zero Energy Ready Home and other high-performance homes
- List of key challenges moving forward engaging builders to participate with Zero Energy Ready Home and other high-performance home programs
- List of What DOE can do to better support HERS raters promoting and verifying Zero Energy Ready Home

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2 Round Table Agenda

February 28, 2015

Time	What	Who/How
1:15 – 1:45 pm	Meeting Review/Agenda /Introductions Best builder or homeowner testimonial	Sam Rashkin Around the Room
1:45 – 2:30 pm	Key Lessons Learned promoting and verifying ZERH	Cards/Sorting
2:30 – 2:45 pm	Sort/Prioritize Key Lessons Learned	Group Ranking
2:45 – 3:00 pm	**Break**	
3:00 – 3:30 pm	Key Challenges Moving Forward engaging builders with ZERH	Cards/Sorting
3:30 – 3:45 pm	Sort/Prioritize Key Challenges Moving Forward	Group Ranking
3:45 – 4:15 pm	What Can DOE do Better Supporting HERS raters with ZERH	Brainstorm

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3 Best Testimonials

The meeting began with a discussion of the value of DOE Zero Energy Ready Homes. Then each rater was asked to identify customer testimonials about the value of the service they provide to builders. Responses included:

- Client Loyalty
- Trusted
- Ask for marketing assistance
- Helped be visionary
- Promoted to national supplier
- Special recognition for clients
- Work at the speed of business
- Competence & Knowledge
- Reduction of callbacks

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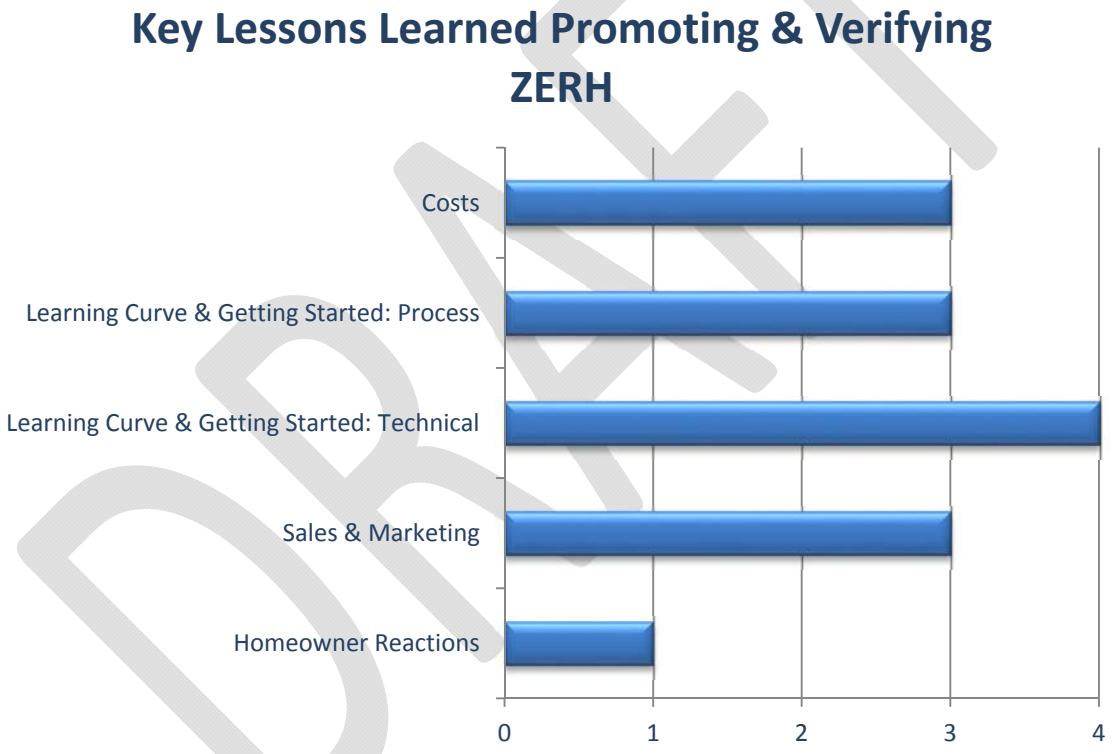
4 Key Lessons Learned Promoting and Verifying Zero Energy Ready Homes

The raters discussed key lessons learned and experiences related to promoting DOE Zero Energy Ready Homes to builders and the verification process. The group then categorized the lessons learned and voted on the most important categories. The results are summarized in the chart below and shown in detail on the following page.

Although all major categories received votes for significant importance, the group placed the highest importance on the process and technical aspects of getting started with the program and getting builders (and raters) over the learning curve.



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Key Lessons Learned Promoting and Verifying Zero Energy Ready Homes

Category	Lessons Learned	Votes
Homeowner Reactions	• Learned that training subs and employees is crucial to success but end user is satisfied • Zero Energy Works! Even in the case of a power outage and 8° F outdoor temps	**1**
Sales & Marketing	• Builder's sales and marketing folks are the best place to start. If sales can sell it, purchasing will buy it. • Selling high performance – if it is not sold as high performance, you give it away. • Builders do not brand their product mostly, and want to have no future ties to home. • Understand the builder's market. The same builder in two different states can have entirely different goals. • Understand your true competition – existing homes. • Address the value proposition.	**3**
Learning Curve & Getting Started: Technical	• Builders don't like to innovate new products or services (tried and true, please). • Critical need to simplify the program requirements. • Importance of trade partner buy-in. • Manufacturers invest in R&D, not builders. • Lack of good details needed (e.g. air barrier framing details on drawings = success). • Deficit in trades' training.	**4**
Learning Curve & Getting Started: Process	• Builder commitment to ZERH starts at the top. • ZERH Builder (and Trade Base) is a process of growth, knowledge, development and commitment. • Need a rater link to design, purchasing, construction. • ZERH is not as hard as it looks, (just looking from the outside) but it is not just a simple deal either. It takes a team. • Builders will be open to suggestions, but we must get it right. Getting it wrong will cause builders to close their mind.	**3**
Costs	• Builders don't like to spend money. • Cost to achieve – not as much as originally thought. • Builders need it to translate to profit. Even if an idea makes sense, it can't be implemented until it will increase sale cost or decrease project cost.	**3**

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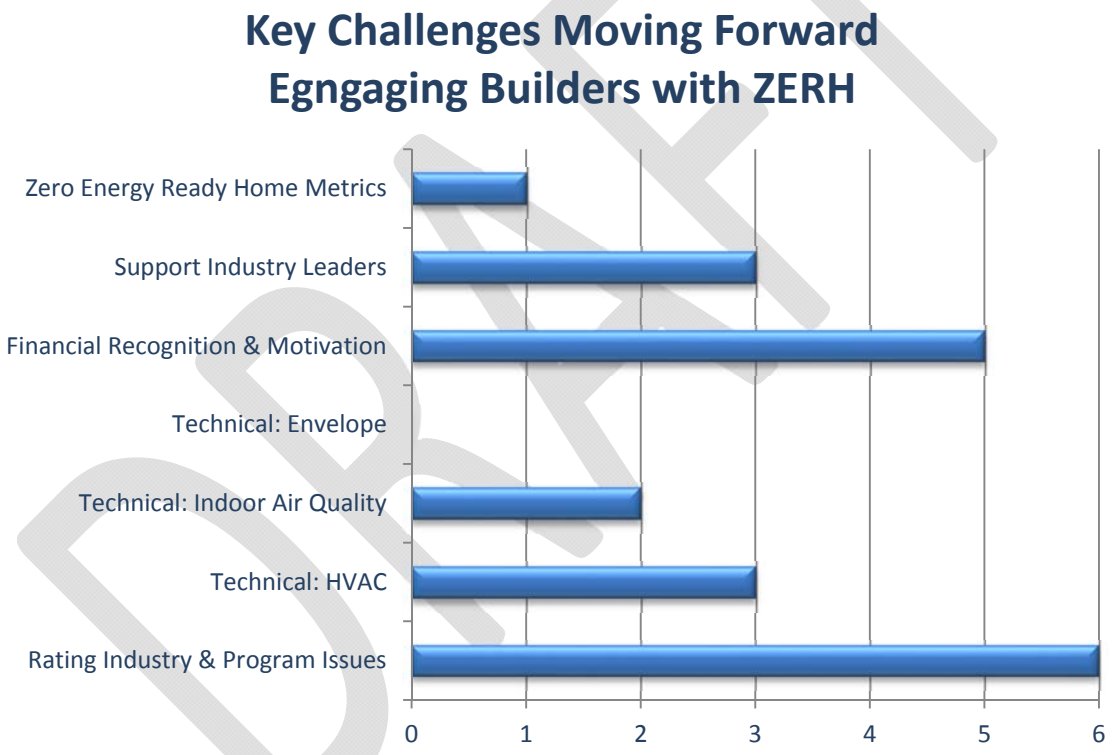
5 Key Challenges Moving Forward Engaging Builders with Zero Energy Ready Homes

Raters were then asked to identify key challenges moving forward engaging builders and promoting DOE Zero Energy Ready Homes, or finding builders already building at this level. The group organized these challenges into seven categories and voted on their priority. The results are summarized in the chart below and shown in detail in the table on following page. Simplifying the process, both from a rating industry standpoint and from a federal program standpoint was identified as a top priority. In addition, finding ways to recognize and encourage leaders and to motivate the industry to move to DOE Zero Energy Ready Homes were considered important.



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Key Challenges Moving Forward Engaging Builders with ZERH

Category	Challenges	Votes
ZERH Metrics	• Quantify and communicate benefits – tangible and quantifiable benefits needed • Conversion stories for the top – sales increases, profit increases, viral marketing increases • High performance homes in metrics that are sellable: bills, water savings, guarantees	**1**
Support Industry Leaders	• Training – techniques, training, tools, incentives – to pull trades through (e.g. trade merit badges) • Promoting value of exceptional performance • Increase marketing of ZERH – brand recognition (e.g. Energy Star success) • Address fear of "lost sales" due to being the only builder on ZERH Island (don't want to look too different) • High performance homes marketing/education	**3**
Financial Recognition & Motivation	• Make Energy Efficient Mortgages real – energy efficient appraisal addendum and SAVE Act; MLS incorporation • Mortgage and lending industry buy-in • Utility/state/federal tax credit alignment (e.g. EPACT tax credit), mortgage industry • Can we link ZERH certification with 45L certification • Offer financial incentives that are steady and predictable • Component based rebates/incentives • Carrots: tax credits, tax abatements, Low Income Housing Tax Credits, grants • Sticks: code increases, mandated programs • Tax inefficient homes differently than efficient ones – lower for energy efficient homes • Local Government outreach on low/no cost incentives (expedited permits)	**5**
Technical: Envelope	• Air barriers are achievable; additional insulation with minimal changes to framing without using Spray foam • Townhouse obstacles to achieving 3 ACH50	**0**
Technical: Indoor Air Quality	• How can raters help address builders' concerns about tighter homes and moisture buildup	**2**

Technical: HVAC	• Internal component gains (e.g. ducts in conditioned space)
	• Energy Star Requirements
	  o HVAC
	  o Anything related to air flow
	• Ducts in the attic are an obstacle in Texas and southwest (cost/perception – sealing)
		3

Rating	• Modeling does not give sufficient credit for moving ducts to	**6**

Industry & Program Issues	conditioned space • Modeling accuracy improvements needed – thermal break and ground coupling • Energy Star – Great raters are pitted against great HVAC contactors to the detriment of the program. Poor raters and poor HVAC contractors skate by – unfair • Rater quality enforcement • Frustrations with Rev 8 of Energy Star (resolved based on feedback following meeting)

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6 What DOE Can Do Better Supporting HERS Raters with ZERH

The attendees provided feedback on how DOE could best use its resources to support rater commitments to ZERH. This feedback is shown in the table below. DOE will report back at the Second Leading Rater Round Table on how well it was able to address these suggestions.

Category	DOE Actions
Marketing Tools	• Plaques for home • Create marketing collateral (Banners, sample radio ads); builder paid • Neutral high performance homes marketing (new vs. existing) • Link ZERH brand to convincing "storytelling" • Collaborate with EPA to recognize cities/communities that have "above average" % of Energy Star/ZERH
Networking	• Provide connections – builders interested in ZERH w/raters interested in delivering ZERH

Technical Resources	• Education and Training: Series of videos on Zero Energy Homes from various perspectives: builder, rater, contractors, homeowner, real estate broker, politicians
	• Develop architectural details
	  o The perfect common wall
	  o Visual details like the ice water in the oven
	  o Air barrier details and best construction ideas
	• Training specific to trade: builder sales staff, builder business, appraisals, purchasing, raters, etc.
	• Quantify Health

Program Developments	• Create/modify standards for multifamily buildings (i.e. compartmentalization) • ZERH = Energy Star + o Collaborate/negotiate with EPA to streamline E-star (i.e.: abridge HVAC requirements to "most critical" items only • Application Product Interface (API) – Speed data entry for certification process
Valuation and Value Metrics	• Develop a source for the value of high performance home features o Value Propositions: Blown vs. batt; builder grade vs. triple pane; most common HVAC vs best; most common DHW vs best; resale green vs. code; climate zone sortable program specs (tool) • Develop offset cost sheets for targeted best practices • Engage Insurance Industry to recognize ZERH Value, especially disaster resistance option • Convince national lender

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