

The Future: HERS in 2024

Panelists:

Ben Adams – Magrann Associates

Steve Byers – EnergyLogic

Laura Capps – Southface

Jesse Krivolavek – American Energy Advisors

Summary of statements

Ben Adams

- Energy guarantee comes standard with every new home
- HERS ratings will be standard for every new home in order to determine the guarantee
- Homeowners will compare guaranteed cost rather than HERS ratings (except for the geeks)
- The variance in efficiency modeling will have tightened sufficiently for both asset and operational usage to make this reliable
- Residential energy intensity (all end uses) will have gone down, driven in part by continued technology disruptors (e.g. streaming will have made DVRs redundant, LED lighting ubiquitous, etc.)
- True net zero will drive additional conservation “If I can save it I can sell it”
- Solar PV and electric vehicles will be a common disaster recovery on-site generation strategy for homes
- Utilities will be tangibly losing their monopoly as distributed generation has scaled up (rooftop PV, solar farms, wind farms, etc.). The concept of baseload generation will be shifting so that utilities are becoming the variable load suppliers rather than the guaranteed baseload supplier – fundamentally changing the demand and delivery model... think Netflix DVD vs. Blockbuster; On Demand vs Netflix DVD.
- Energy code enforcement will be becoming a record-keeping process only. The required knowledge level and protocols will have surpassed the capability and scope of code officials responsible primarily for life safety. Builders will want to ensure they are addressing the liability intrinsic to high performance homes themselves rather than relying on code officials who accept none (can't be sued – code officials are legally only “advisors”). So Builders will rely on verification by experts, including HERS Raters, which will also drive up liability of HERS rater. Small rating companies may not be able to take on this level of liability, driving consolidation. Cost of ratings may more accurately reflect a balance of liability risk and commoditization due to mainstreaming. All of this is a logical progression from HERS ratings as code.
- Raters may be able to expand scope of services to take advantage of trend in code enforcement shedding direct verification responsibility (structural/durability, electrical, etc.). May also drive licensing of other trades within the construction process (HVAC, framing, insulation, etc.).
- Independence, value and integrity of raters may go up as builders rely increasingly on rater services for liability avoidance (raters accept more risk).

- Insurance industry wakes up to interdependence of building science with durability and performance risk, opening up a new channel for rater expertise and services.

Steve Byers

“It's tough to make predictions, especially about the future.” - Yogi Berra

- Where we are
- Net-Zero is at 49%
- PassivHaus is gaining traction
- HERS Ratings are standard
- HERS Raters are performing more services than ever
 - 3rd party QA
 - Indoor air and other health concerns become bigger driver via insurance carriers
 - Design services
 - Deeper integration into builders teams

How we got here

- Consolidations have occurred
- Established rating companies have been forced out of business due to ethics and quality assurance violations
- Natural gas prices shot up in 2020 taking electricity prices along with them, consequently, consumer awareness of energy and thus the HERS index escalated as well.
- Dramatic weather events driven by climate change impact housing industry, disaster resistance increases in importance
- Class action lawsuit filed against... Utility, HERS Raters, RESNET

Industry Maturation

- Professionalization
- Investment
- Roughly a \$750,000,000 industry
- Boom-bust cycles continue in housing industry with some dampening due to demographic trends -- multi-family, lower home ownership rates, generations with less access to capital
- Crises in health and education disrupt economy at some point in the next ten years
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Laura Capps

What will the state of homebuilding be?

- Increase in US population by 15-30 million people resulting in the need for approximately 6 million new homes, not including homes that will be renovated, removed or rebuilt
- Lots of new construction activity in the sunbelt compared to rest of US
- Push for urbanization, while continuing suburban growth patterns
- Increase in modular construction activity

What will code look like?

- More divergence from what code is adopted and what states actually do unless there is a big policy change like the ARRA fund that required states to get a decent code on the books. Positive trend in code stringency, but also code backlash.
- Manufacturing change requirements/mandates by governments. These are likely to create the biggest change when compared to code updates since enforcement is not an option if done nationally (past examples - windows, AC efficiency). Dangerous when we stagger efficiency requirements based on market due to global/national transport.

What role will ratings and/or HERS Index play in building?

- HERS Raters and ratings will be able to offer code compliance path in most markets, but HERS ratings will still be optional and some markets will continue to be slow on adoption.
- The industry will need to define our niche in MF – what value are we bringing to that market and at what cost.
- Policy changes will create the biggest impact for advancing the demand and use of ratings in the market, as well as driving energy efficiency in homes.

Where will consumer consciousness of ratings and/or the HERS Index be?

- Hopefully at same level of awareness as MPG on cars but we need to shore up consistency to ensure the brand is trusted – be able to adapt to changing building types. And, similar to MPG, the rating will continue to be one aspect of the buyer's decision making process with builder reputation, affordability, size, location and cost continuing to be the main factors. Realtors will be more familiar with the ratings and communicating those to buyers. Some select markets will require ratings (HERS or otherwise) prior to home sale).

What will rating businesses look like?

- Rater businesses will continue to diversify the services offered to provide consulting, education and verification to builders and developers. The industry will need to refine conflict of interest and quality assurance/control to allow for increased diversity in rating businesses.
- Reporting will be completely online with metadata collection and dissemination. Utility companies will increasingly turn to Raters for support in implementing DSM programs.

What will the industry as a whole look like?

- Companies will consolidate and large rating organizations will make up the majority of the market, similar to large builders. Competition with other rating systems will increase similar to what has occurred in the green building industry.

Jesse Krivolavek

- HERS Ratings will be conducted on all new residential construction
- Energy Code Inspection will all be third party

- Home performance sensors installed during construction will real-time monitor and adjust performance and operating costs via setting per preferences
 - o Real time sensors and handheld technology will automate and maximize efficiency as well as schedule preventive maintenance
 - o Data companies will pay occupants to automate homes
 - o Wall mounted thermostats will be extinct
- Lending rates and insurance rates will be interdependent upon operating costs derived from Rating Indexes
 - o HERS Complimentary Scales Emerged:
 - ♣ HIS: Health Impact Scale
 - ♣ OURS: Occupied Usage Relativity Scale
 - ♣ Others
- Sustainability will be replaced by Attainability (HERS -500 homes will be built)
- Subdivisions will be built with energy storage stations
- Utilities will be in the model transition generation/distribution to primarily becoming redistributors (both via infrastructure and new storage cell), site generation and maintenance/upgrade services providers
- New energy generation and storage technologies will begin to surface into residential applications:
 - o Nano-Machines may begin harvesting solar energy at much higher rates
 - o Bacteria based green cake energy farms may emerge
 - o Many buildings will be painted with photo voltaic paints or skins
- Homes Health Monitors will monitor the properties and quality of air, water, structure and systems, then will self-correct and adjust essentially heal or ask for help when feeling discomfort
- Human health monitors built into homes communicate with occupant implants and continuously conduct real time human and pet diagnostics that recommend or provide help when needed. "Mr. 2024, your blood sugars are getting a little low which of the following snacks in our inventory sounds yummy?"
- Code tolerance requirements and efficiency in component manufacturing will make Site Built more Site Assembly than built
- Societal interpersonal communication skills will continue deteriorating and tech-heavy homes will become more of a primary internal and external communication mechanism satisfying occupant needs for companionship

General Audience Feedback – Goals we need to pursue for success over the next 10 years:

1. Quality Assurance
2. Performance metrics – collected and reported; market transparency
3. Professionalize our industry (e.g. code of conduct, career-based salaries, attractive industry for current and new professionals, etc.)
4. Pursue IECC certification for individual Raters
5. Insurance – professional liability including errors and omissions for companies, home insurance recognizing HERS benefits; Professional contracts and agreements
6. Engagement in public policy to advocate for large-scale change
7. Utility provider engagement and interface
8. Solve people's problems

Audience Feedback

Answers to question:

With potential paths and destinations for the HERS Industry 2024, what goals will we set to position ourselves for success?

- Stay educated
- Focus currently but get an eye to the future
- Maintain financial viability and keep up with insurance needs
- IECC certification
- Build relationships with Building Associations & Builders
- Continuous education – broad base – global warming events, etc.
- Use of video/internet marketing @ high level

Answers to question:

While listening to the “Panel Predictions”, I think that in 2024 the HERS Industry will look like and include:

- Move toward existing retros
- Lower margins with increased overhead
- Wider acceptance
- Merging with energy production + net zero home technologies
- Greater builder participation and awareness
- Liability and responsibility skyrocketing
- Perhaps larger margins for increased versatility and value
- Multi-family becomes very green/ very small
- Look to local HBAs
- Smart meters / smart grid
- Time of use metering
- Water shortages drive LEED, etc.
- Advanced electrical storage
- Google/NEST – smart home/data
- Solar pv and financing more than just in California
- Increased professional risk/increased liability
- Some type of energy rating system for all homes
- Increased services from rating companies
- Increased energy compliance with codes
- Multifamily well established for all classes of occupation
- Water, health issues very important
- Moderately higher energy bills, much higher taxes
- High tech, data gathering and monitoring home will begin to be the norm
- Changes to the utility models

When asked how they felt about the future, either Awesome or Dreadful – three votes for awesome and one vote for both. Reflective of the rest of the audience. Though overwhelmingly positive.