



Setting the Standards for
Home Energy Efficiency

Findings and Recommendations to the RESNET Board of Directors From the RESNET HERS Index Consistency Task Force

October 15, 2013

Background

With the nation's largest production home builders having all of their homes energy rated and marketing the HERS Index Score of their homes, RESNET has a unique opportunity to evaluate the consistency of rating scores among rating providers across the nation.

RESNET staff has received concerns from some of the leading builders about inconsistency in assigning rating scores to homes from the different RESNET Accredited Rating Providers. They found that the same house plan would have a different HERS Index Score from the different providers.

There is a growing number of production and custom homes relying on the HERS Index Score for marketing their homes' energy performance, the number of code jurisdictions including HERS Index Scores in their building energy codes, and MLS listing the scores. With this trend it is vital that RESNET maintain the credibility of HERS by enhancing the consistency in producing HERS Index Scores.

To address the concerns of builders and take advantage of this opportunity RESNET convened a HERS Index Score Consistency Task Force. The task force is composed of representatives of production builders and HERS software developers and Rating Providers. Members of the task force are:

Production Builders

- Jacob Atalla, KB Home
- CR Herro, Meritage Homes
- Jim Petersen, The Pulte Group
- Dean Potter, K. Hovnanian Homes

HERS Software Developers

- Philip Fairey, Energy Gauge USA
- Rob Salcido, REM/Rate

Accredited Rating Providers

- Dave Bell, Environments for Living
- Brett Dillon, IBS Advisors

The mandate of the task force was to identify areas of inconsistency and recommend actions to improve consistency.

Task force members undertook an analysis of the consistency of how rating scores are produced. This analysis included surveys of builder division managers and their Rating Provider clients.

This analysis found three broad areas of the inconsistency of rating scores:

- Inconsistency of quality assurance oversight by Rating Providers
- Inconsistency of the way the various software programs allowed variance of raters in inputting data into the program
- Inconsistency of Home Energy Rater candidate testing

The following are the findings and recommendations of the RESNET HERS Index Score Consistency Task Force:

I Enhanced Quality Assurance of Ratings

A Independence of Quality Assurance Designees

Background

Currently RESNET accredited Rating Providers are also allowed to be rating companies. There is no requirement of independence of a provider's Quality Assurance Designee. At a minimum this presents an optics issue in that a Rating company is also providing quality assurance oversight of its employees. This could lead to cutting corners in the quality assurance process to keep a client happy.

As home energy ratings move into the regulatory environment, the RESNET HERS Index Consistency Task Force believes that there should be an arms-length relationship between the Quality Assurance Provider / QA Designee and the entity providing the Home Energy Rating. The task force believes that requiring independence of the Quality Assurance Designee is of paramount importance in ensuring the national consistency of HERS Index Scores.

It is recommended that Quality Assurance Providers be agents of RESNET and not have any employer/employee relationship with the entity that is providing the Home Energy Rating. . This is similar to the way real estate appraisers work. Banks are not allowed to use an in-house appraiser but must select and use an independent appraiser certified by a state government.

Recommendation

The RESNET HERS Index Consistency Task Force recommends to the RESNET Board of Directors that RESNET certified Quality Assurance Designees shall —

- 1) Serve as agents of RESNET*
- 2) Be affiliated with a RESNET-accredited Quality Assurance Provider*
- 3) Have neither a financial interest nor an employee/employer relationship with the entity performing the Home Energy Rating.*

B Percentage of Rated Homes by a Rater that Must be Quality Reviewed Annually

Background

Currently RESNET's standards require annual quality assurance reviews of raters consisting of 1% field review and 10% building file reviews. There is a question as to whether this is adequate. The tradeoff between the added cost of additional reviews with the cost effectiveness of rating services must be balanced. It is proposed that procedures be developed that would maintain the current quality assurance thresholds but add provisions for additional oversight when errors are found. This process could be modeled after the process developed for failures found in the sampling protocol. Before being submitted

Recommendation

The RESNET HERS Index Consistency Task Force recommends to the RESNET Board of Directors that the RESNET quality assurance standards be modified to maintain the current requirement of annual quality assurance reviews of raters consisting of 1% field reviews and 10% building file reviews with provisions added for additional oversight of HERS Raters when errors are found in these reviews. RESNET HERS Index Consistency Task Force shall review the new provisions prior to being submitted to the RESNET public review process.

C Clearer and Consistent Information and Training from RESNET to Quality Assurance Designees

Background

Through the task force round tables it was discovered that many RESNET accredited Rating Providers are uncertain of RESNET's expectations in terms of what should be involved in the quality assurance review of raters. It is proposed that RESNET staff in 2014 undertake an aggressive campaign on this issue. This could include development of a national RESNET quality assurance evaluation checklist, educational webinars, electronic bulletin boards and manuals. RESNET staff will include in the 2014 RESNET budget submission resources to undertake this.

Recommendation

The RESNET HERS Index Consistency Task Force recommends to the RESNET Board of Directors that RESNET undertake an aggressive campaign on the education of quality assurance designees and quality assurance providers. This could include development of a standardized RESNET quality assurance evaluation checklist, educational webinars, electronic bulletin boards and manuals. It is recommended that the RESNET Board of Directors allocate resources in RESNET's 2014 budget to undertake this effort.

II Home Energy Rating Software Program Improvements to Ensure Greater Consistency of HERS Index Scores

Background

The task force finds that there are ways to unduly manipulate rating software tools to gain points on a HERS Index Score. One example found unwarranted rater flexibility in assigning the fan electrical usage for whole-house ventilation systems.

A subcommittee composed of Philip Fairey of the Florida Solar Energy Center, Rob Salcido of Architectural Energy Corporation, Brett Dillon of IBS Advisors, and Steve Baden of RESNET identified the following options for enhancing the consistency of HERS Index Scores through improvements in the rating software programs.

Recommendation

The RESNET HERS Index Consistency Task Force recommends to the RESNET Board of Directors that a task force composed of representatives of rating software developers, quality assurance designees, Rating Providers, homebuilders and other organizations be appointed to develop specific recommendation for each the following areas:

- ***Establish limits to input variables for whole-house ventilations systems in the RESNET Standards***
- ***Establish a task group to determine reasonable bounds checks that can be incorporated into software to limit or warn users when input values are beyond reasonable limits***
- ***Enhance rating software tools to enable QAD flags to be set for internal inconsistencies that should be checked prior to entering a building file into RESNET registry***
- ***Modify RESNET registry XML schema to include reporting of QAD flags***

III Enhanced Training of Home Energy Raters

Findings

The task force discovered that there are inconsistencies among raters in producing HERS Index Scores of homes. A contributing factor is the current method that Home Energy Rater candidates are tested in their practical knowledge in inspecting and testing the minimum rated features on a single home.

Rater Training Providers have been inconsistent in administering the test. In many case the field test is conducted has a class exercise. This does not test the individual candidate's practical knowledge is conducting an accurate rating. It results in most cases of every candidate passing the practical test.

In all cases the field testing is conducted on a single home per class. This presents restrictions on the ability to test the range of a rater candidate's knowledge. An example of this is rarely is there a test home that has basement, slab-on-grade and crawlspace foundations.

This lack of a practical test is a contributing factor in raters producing inconsistent HERS Index Scores.

The RESNET Training and Education Committee came to the same conclusion and is developing a rater practical test. The test will be an online simulation based test which the candidate will be tested on addressing the minimum features of a home as well as a number of variables in the identified key knowledge areas.

Funding is being requested in the RESNET 2014 budget for the development of this practical test.

Recommendation

The RESNET HERS Index Consistency Task Force recommends to the RESNET Board of Directors that it support the RESNET Training and Education Committee proposal to develop a HERS Rater Practical Test and approve the 2014 budget request.