2015 RESNET Building Performance Conference

Breakout Sessions

HERS Index in Code Compliance – Compliance Flexibility for Builders and Business Opportunities for Raters

Compliance Flexibility

RESNET HERS Index and the 2015 IECC

The 2015 edition of the International Energy Conservation Code (IECC) now includes a new Energy Rating Index (ERI) approach. Given the popularity of RESNET's Home Energy Rating System (HERS) within the building community, the HERS Index is likely to be the metric of choice for homes choosing to comply using the ERI path. Because the HERS Index is a whole building performance index while the traditional IECC performance-path considers only heating, cooling, domestic hot water and lighting end-uses, there are differences in how the two systems behave in terms of traditional code compliance. Pacific Northwest National Laboratory (PNNL) and Florida Solar Energy Center (FSEC) conducted analyses exploring the correspondence between the HERS Index values and traditional IECC performance-path compliance. This session provides a brief overview of the analyses and results followed by a detailed discussion of how those results can address potential code adoption issues at the state level.

Presenters: Philip Fairey, Florida Solar Energy Center; Vrushali Mendon and Z. Todd Taylor, Pacific Northwest National Laboratory

Taking It to the Streets - Applying the Energy Rating Index Code Compliance Option at the State and Local Level

The 2015 IECC has an Energy Rating Index compliance option. But the option is not reality until it is adopted at the state and local level. RESNET has developed a set to tools aimed at helping raters, builders and code officials to consider applying the Energy Rating Index compliance option. These tools include:

- Overview of the Energy Rating Index compliance option
- HERS Index Scores with 2009 and 2012 versions of the IECC
- Implementation of the Energy Rating Index at the state and local level
- Cost effectiveness of the 2015 IECC Energy Rating Index option
- Case studies of code jurisdictions using a HERS Score Index Score option

This session will introduce these tools, explore the adoption of the option at the state and local level and present examples where the HERS Index Score compliance option has proven to be successful.

Presenters: Eric Makela, Britt – Makela; Leslie Badger, Vermont Energy Investment Corporation and Clayton Traylor, Leading Builders of America

The Cost Effectiveness of the Energy Rating Index Compliance Option of the 2015 IECC

First the good news, the 2015 IECC includes an Energy Rating Index compliance option. This gives builders greater flexibillity and raters new business opportunities.

Now the bad news, the rating index scores are stringent - in the 50s in all climate regions.

This raises the question -- Are the rating scores mandated in the 2015 IECC cost effective to achieve? To answer the question RESNET commissioned the Florida Energy Score to undertake an economic analysis of going from the 2012 IECC to the 2015 IECC Energy Rating Index option.

This session will feature the authors of the study - Philip Fairey of the Florida Solar Energy Center, David Goldstein of the Natural Resources Defense Council and Eric Makela of Britt-Makela. They will present the findings of the study and lead a discussion on its implications for local code jurisdictions who are considering adopting the 2015 IECC.

Presenters: Philip Fairey, Florida Solar Energy Center; David Goldstein, Natural Resources Defense Council and Eric Makela, Britt - Makela

Business Opportunities

Opportunities for HERS Raters to Expand Their Services to Include Energy Code Inspections

An increasing number of code jurisdictions have adopted a HERS Index Score compliance option to their energy codes. The 2015 IECC will include an Energy Rating Index option. The awareness of home energy ratings is growing among code officials. With this awareness come new business opportunities for certified RESNET HERS Raters. RESNET has entered into a partnership with the International Code Council to open this opportunity to raters. This session will explore this opportunity.

Presenters: Steve Baden, RESNET and Dominic Sims, International Code Council

HERS-As-Code Compliance: What Raters and Code Officials Need to Know First...

This session will explore the expanding use of HERS Ratings and Raters in Energy Code compliance in states across the country. Case studies of states utilizing HERS and Raters as thrid-party compliance mechanisms will be reviewed. The knowledge needs of both Raters and Code Enforcement Officials (CEOs) - what they need to know about each others businesses and standard operating procedures -will be discussed in depth, with input from representatives of both groups during the presentation. The Rater community will learn of new business opportunities for applying their skills and trade to the increasing interest in achieving better code compliance, and we hope to work with attendees to solve some of the logistical issues presented by the use of HERS-As-Codes in the U.S.

Presenter: Michael C. DeWein, Leidos

Prescriptive, Performance, and Energy Rating Index: Perspectives on the Requirements in the 2015 IECC and HERS Provider Risks, Responsibilities and Opportunities

The 2015 IECC now includes an Energy Rating Index (ERI) compliance option for residential construction. This pathway includes guidance on the use of the Home Energy Rating System (HERS) Index for energy code compliance with the IECC. One of the advantages of this compliance pathway

is flexibility when complying with the code. Another is to provide valued relief to building inspections departments by delegating some of the aspects of IECC compliance enforcement to professional raters. However, as this new responsibility shifts from building inspectors to HERS raters, it is critical that raters are aware of their increased responsibility and some of the risks embodied therein. This presentation will discuss what the new code requires along with some of the risks and responsibilities of raters as de facto code compliance officials. It will discuss opportunities embedded in providing increased value to the wider marketplace of utility programs, remodeling and replacement projects, mortgage lenders and others.

Presenters: Bridget Herring and Chris Mathis, Mathis Consulting Company

Technical Issues

Aligning HERS Index Values with Code Requirements: Properly Assessing Windows

Changes to the IECC in 2009, 2012 and 2015 have caused a divergence in how HERS index values are calculated compared to common energy code requirements. Recent changes to the IECC have now also opened the door for using the HERS Index as an energy code compliance mechanism. Imperative to code compliance is alignment with the calculation tools and techniques by which window impacts on whole building energy use is determined. This presentation will review the current inconsistencies that exist between the HERS Index calculations and requirements within the IECC. Critical differences in assumptions and techniques include how interior shading is calculated and shading assumptions, thermostat set point requirements in energy analyses and equipment sizing, window-to-wall area ratio limits and assumptions and others. We will discuss possible solutions for raters in the field to reconcile the code requirements with more accurate HERS index calculations. Ideally these refinements will strengthen the HERS rating pathway as a potential energy code compliance option.

Presenters: Jim Larsen, Cardinal Corporation and Chris Mathis, Mathis Consulting Company

Air Leakage Testing Codes and Standards: How They are Being Used and How They are Evolving

Energy Codes are moving towards requiring tighter building envelopes as well as verification for building air leakage performance. To more effectively meet these evolving code requirements, test methods and specifications for air leakage testing are also evolving. This presentation will review code requirements for air barrier and air leakage testing in the 2009 IECC, 2012 IECC and 2015 IECC and how they are modified during state code adoption. This presentation will also review progress on ASTM air leakage test method and air barrier specification standards and how they will aid in Energy Code compliance.

Presenter: Theresa Weston, DuPont Building Innovations

RESNET's New Quality Assurance Oversight Procedures

Path to Enhanced National Consistency of HERS Index – New RESNET Board Policies on RESNET Quality Assurance Standards and Procedures

For the past year, RESNET has undertaken a process to enhance the national consistency of HERS Index Scores. This effort included working groups to develop options for the needed changes to RESNET's standards and procedures, to gather input on the options by the rating industry, and to develop a set of recommendations to the RESNET Board. The RESNET Board has adopted a set of new policies. This session will explain the most significant proposed changes and answer questions from the industry.

Suggested Presenters: Andy Gordon, Washington State University Energy Program and Daran Wastchak, DR Wastchak

Enhancing the Consistency of Quality Assurance Oversight of Ratings – RESNET's New Tools for Rater Quality Assurance Designees *(QAD Roundtable)*

In its effort to enhance the national consistency of HERS Index Scores, RESNET has developed a set of new tools for Quality Assurance Designees. These tools include:

- A standardized rating file review checklist
- A standardized rating field review checklist
- A quality assurance process handbook
- A series of videos on quality assurance

This session will demonstrate step-by-step how to use the new checklists and discuss how the other tools can assist Quality Assurance Desginees do their jobs more consistently.

Presenters: Daran Wastchak, DR Wastchak and Laurel Elam, RESNET (moderator)

Role of Provider under new RESNET Quality Assurance Standards and Procedures

The RESNET Board has adopted a set of new policies governing the quality assurance oversight of ratings. A key feature is that Quality Assurance Designees will serve as agents of RESNET. The proposed changes to the RESNET quality assurance oversight procedures does not alter the importance of RESNET accredited Rating Quality Assurance Providers. This session will explore the role of accredited providers in the new rating quality assurance oversight environment.

Presenters: Dave Bell, Masco and Chris McTaggart, Building Efficiency Resources

How New RESNET Quality Assurance Standards and Procedures Will Benefit Builders, Utilities, and Code Officials

RESNET is developing new procedures and standards to ensure the national consistency of HERS Index Scores. This session will focus on how this increased consistency will benefit builders, utilities and code officials.

Presenters: Ben Adams, MaGrann Associates; CR Herro, Meritage Homes; Dominic Sims, International Code Council and Kelly Stephens, SunRiver St. George

Current Rating Quality Assurance Oversight – Bare Minimums and Best Practices

Each year RESNET conducts oversight monitoring of how its quality assurance provisions are being carried out by Rating Quality Assurance Providers. In this session Laurel Elam, RESNET Quality Assurance Manager and Abe Kruger of SK Collaborative will highlight the best practices that Providers have implemented and explore some of the less than stellar practices uncovered. Presenters will highlight what RESNET sees as best practices and provide a learning moment in what to avoid. QADs, delegates and providers should be bring their ideas, tips and best practices to share too!

Presenters: Abe Kruger, SK Collaborative and Laurel Elam, RESNET

A New Frontier and Opportunity - Development of RESNET Water Efficiency Rating System

Developing RESNET's New Water Efficiency Rating System

Water is the new frontier for RESNET and HERS Raters. In many parts of the nation water is fast becoming a scarce commodity. There is clearly a need for a system to rate a home's efficiency in water use. This will allow homebuyers to know how efficiently water is being used in the homes they are considering to buy. It will also provide an opportunity for homebuilders to monetize the efficiency of their homes. RESNET is beginning the process of developing a rating system for the water efficiency of residential buildings. This session will explain why RESNET is undertaking this effort, the process RESNET will use in developing its standards and procedures, and will explore what opportunities this presents to HERS Raters and builders.

Presenters: Jacob Atalla, KB Home and Steve Baden, RESNET

Overview of the New RESNET Capabilities to Account for Hot Water Efficiency

Hot water use is generally among the top three energy uses in a home or apartment. Over the past several years there has been a concerted effort to enable HERS to account for reductions in hot water use in addition to its existing ability to account for water heater efficiency. The method can now provide credit for reductions in the structural waste due to improved hot water distribution layouts, the water savings due to water efficient dishwashers and washing machines, reduced flow rate shower heads and faucets, the operational waste due to thermally activated shower shut off valves, the energy savings due to the use of drain water heat recovery, and the energy consequences of using circulation loops to reduce hot water wait times. Once the reductions (or increases) in water use have been accounted for, the energy implications of those decisions are then calculated and HERS points (or reductions) are assigned. This session will present an overview of the development of the new method, the underlying math and a discussion of how raters will be able to verify that each claimed measure has in fact been installed and is operating as intended.

Presenters: Philip Fairey, Florida Solar Energy Center; Gary, Klein, Gary Klein and Associates and David Roberts, National Renewable Energy Laboratory

The Money Is In the Pipes, The Whole Story About Saving Water in Homes
"We never know the worth of water till the well is dry." – Thomas Fuller, 1732

This session's focus is to change our water consciousness. It will clearly help us understand why water saving is critical in our changing marketplace. Our water value proposition is critical towards increasing our bottom line and helping others make the much needed step towards reducing water use. A key to rating the water efficiency of a home is to understand how a home uses water. This session will provide an overall view of our nations need and how it leads to the demand for how water is used in a home and strategies for reducing water consumption.

John Tooley, Advanced Energy

New Technologies to Reduce Water Consumption

A treasure trove of new technologies has emerged that reduces the water consumption of homes. This session will explore these emerging technologies.

Presenters: Larry Aker, Dimerc Systems; John Bell, Greyter Water Systems Inc.; Bob Hitchner; Nexus eWater, Inc; Edward R. Osann, Natural Resources Defense Council and Jonah Schein, Environmental Protection Agency WaterSense

Increasing Home Water & Energy Efficiency By Eliminating Shower-Based Behavioral Waste

RESNET is in the process of adding provisions to consider the distribution of hot water within its energy consumption calculations. The waste associated with hot water distribution can be broken down into two major categories: structural waste and behavioral waste. Structural waste is an inherent consequence of today's plumbing architectures. Namely, conventional home designs and building codes necessitate the use of lengthy plumbing runs to connect a home's hot water source to its bathrooms. Throughout the years, the increasing presence of structural waste has led rise to a new category of waste, behavioral waste. Recognized, but much less understood, behavioral waste occurs after bathing temperature water reaches the showerhead, but before the user beings showering. Through the analysis of primary data collected by Lawrence Berkeley National Labs via a wireless sensor network that monitors water flows and temperatures in homes throughout California, and previous analysis of the 1999 REUWS survey, this presentation demonstrates the following:

1. The water and energy use associated with behavioral waste is significant - ranging from 1.8 to 2.6 gallons of hot water wasted per shower.

2. On an individual basis behavioral waste varies widely. Some people consistently produce little to no behavioral waste while others regularly generate large amounts - almost no one is "average".

3. There appears to be no correlation between low structural waste and low behavioral waste. This finding has broad implications as many in the building industry commonly believe that reducing structural waste and delivering hot water quickly to the point of use will produce a behavior change in users.

4. Technologies, referred to in the BSR RESNET Addendum "a" to ANSI/RESNET 301-2014 as an Approved Hot Water Operational Control Device, can be an effective tool in eliminating behavioral waste without requiring behavior changes. As such, a Hot Water Operational Control Device is essential for guaranteeing the deemed savings commonly attributed to efficient plumbing configurations and products capable of reducing structural waste i.e. hot water recirculation systems.

Presenter: Troy Sherman, Evolve Technologies

Comparison of the Energy Consequences of Different Hot Water Circulation Pump Control Strategies

Circulation systems for service water heating are installed in buildings where the distance from the water heater to the plumbing fixtures and appliances is large and there is a desire to reduce the waste of water and time waiting for the hot water to arrive. Most of these systems have a circulation pump to move the water around the loop. Assuming the same floor plan and location of the circulation loop relative to the plumbing fixtures and appliances, once the loop is full of heated water, the waste of water and time will be the same, regardless of the controls for the loop. The energy required to ensure that hot water is in the supply portion of the loop depends on how the controls change the run time of the circulation pump.

We will report the results of the differences in energy consumption based on changing the control strategies of a circulation loop for the service water heating system in a single-family home. The

strategies that are being compared include no circulation, continuous circulation, timer controlled, temperature controlled, time and temperature controlled, demand initiated, and controls that are able to learn the hot water use patterns. The loop is being monitored with recording data loggers that monitor the flow rate and temperature drop through the loop. The electrical energy for the pump is also being monitored and will be reported. Results will be compared to each other and to first principle estimates for different hours of pump operation.

Presenter: Gary Klein, Gary Klein and Associates

Cost Effective Ways to Lower HERS Index Score

In Hot Water: Everything a Rater Needs to Know to Stay Out of It

Domestic hot water systems are evolving rapidly, and new technologies are achieving energy efficiency at levels never before seen. This class will focus on heat pump water heater performance, how they work, common installation mistakes and how to install them right to achieve their rated efficiency. At the same time, water conservation is fast becoming the next big “efficiency” challenge. This session will provide insight into the latest HWH systems, and how they affect energy and water use – and the HERS rating.

Presenter: Steve Easley, Steve Easley & Associates Inc.

Everything You Ever Wanted to Know About Air Sealing and Insulation but Were Afraid to Ask

Explore the world of high performance air sealing and insulation from a true building science perspective. This presentation will help you understand what really matters when installing insulation and performing air sealing, and how to catch trouble before it affects the entire building assembly or results in poor thermal performance and customer dissatisfaction.

Presenter: Gord Cooke, Construction Instruction

HVAC Basics for High Performance Homes

What’s a HERS rater need to know about HVAC? High performance homes offer a wealth of HVAC challenges and opportunities. Sharpen your knowledge of proper equipment choices and sizing, and gain insight into how recent developments in system technologies provide comfortable, safe and energy efficient options.

Presenter: Gord Cooke, Construction Instruction

Demystifying the Future of Energy Efficient Homes

Take a look into the future of housing and HERS ratings. Net Zero Ready and Net Zero Homes are no longer novelties. Learn the strategies builders are successfully implementing across various climate zones to achieve low to zero net energy use, and how the revolution in energy efficient building practices will affect energy ratings. We’ll also discuss some of the most interesting advancements in housing technology on the horizon.

Presenter: Steve Easley, Steve Easley & Associates Inc.

Shape of Things to Come – New Trends in Lowering HERS Index Scores

There is an exciting array of new products that are entering the market that will improve the energy performance of a home and reduce the HERS Index Scores. This panel of leading national production builders will explore this new frontier.

Presenters: Jacob Atalla, KB Home, CR Herro, Meritage Homes & Jim Petersen, Lennar

Building Science

From the Dawn of Mankind to Yesterday – A Brief History of Ventilation

Ventilation and ventilation strategies throughout the ages … from living under tree canopies to living in leaky leaky dwellings to leaky leaky dwellings with windows to super-tight dwellings with satellite TV. The journey begins during Neanderthal-ish times and their struggles with ventilation (some [a bunch of] creative license taken here) to our modern-day caves and our struggles with ventilation…. What we have learned and forgotten over the past 355,000 years or so, all covered in about an hour.

Presenter: Stephen Davis, ConServ Partners, LLC

Conditioned Attics: Building Strategies and Solutions

Changes in California's 2013 Building Energy Efficiency Standards Energy Code (effective July 2014) and implications of the International Residential Code (IRC) R806.5 have made conditioned *vs.* unconditioned attics an industry hot topic. One issue not up for debate is that regardless of conditioned or unconditioned attics, managing the energy flow used to heat and cool a home is largely based on how the home is – or is not – insulated.

In climates that typically have conditioned attics, options have been historically limited with many professionals defaulting to spray polyurethane foam (SPF) solution. However, a recent case study from KB Home illustrates how the company partnered with Owens Corning to successfully identify a fiberglass solution that maximized performance, energy efficiency and safety. Ultimately, the fiberglass applications delivered high-performance conditioned attics and increased the comfort, durability and energy efficiency of the homes.

To help today's energy efficient experts stay fully informed of their product options, this educational session will highlight performance results from this case study's field testing as well as new research data. Ultimately, audience attendees will leave this session with new cost-effective energy efficiency practices for conditioned attics.

Presenters: Achilles Karagiozis, Owens Corning and William Miller, Oak Ridge National Lab

Creating Excellence in Insulation Installers and Air Sealers - The New RESNET National Designation

A key concern to the insulation industry is to maintaining a competent work force. RESNET has introduced a tablet based mentoring program for insulation installers and air sealers that will lead to a national designation of RESNET Energy Smart Insulation Installers. The program is being piloted in the Dallas-Fort Worth market. This session will demonstrate the new tool and have the insulation company explain the results of its pilot effort.

Presenters: Cardice Howard, Garland Insulation; Rob Moody, Organic Think and Dallas Jones, Green Training USA

Smart Flashing Solutions for Exterior Insulation Sheathing

Exterior insulation sheathing benefits are well recognized in the prescriptive energy code compliance options; however, effective joint treatment has been an area of frequent discussion. An overview of current product offerings will be presented in addition to new

developments. Both the material science and practical field application advantages and challenges will be discussed.

Presenter: Linda Jeng and Dan Tempas, Dow Building Solutions

High Performance Insulation Q&A Session

Join leading insulation experts for a panel discussion on how high performance insulation affects energy efficiency. Here's your chance to ask insulation experts with decades of experience your toughest questions.

Panel: Dean Moody, Intermountain West Insulation; Steve Malon, Malon Insulation Service; Clint Shireman, Knauf Insulation; Joe Medosch, Energy Education Curriculum and Shannon Moe, Kinzler Construction Services

Turn off the lights! – Leveraging Daylighting Technologies to Shed Lighting Loads.

Advanced Daylighting Strategies – This workshop will provide an introduction to industry advancements that support the application of daylighting technologies as a Lighting Energy Load Reduction Strategy in HERS.

Eric H. Miller LEED AP BD&C, and Neall Digert, Ph.D., MIES will discuss new advancements in National Fenestration Rating Council (N.F.R.C.) rating protocols that have been developed for new energy efficient Optically Complex Fenestration Products (O.C.F.P's). Optically engineered products (such as tubular daylighting devices), offer a unique opportunity for builders to reduce lighting loads and receive credit for these energy efficient innovations. Advancements in rating protocols, such as VTannual, will allow energy modeling experts to quantify the benefits of these new O.C.F.P's and adapt the HERS calculations, allowing energy raters to quantify the energy benefits of these new technologies as they are encountered in the field. The presentation will set up a conversation about how the integrated design process can be leveraged to reduce energy loads. Participants will be empowered to lead building teams in the integration of daylighting and other zero energy technologies into energy sipping homes.

Presenters: Neall Digert Ph.D. and Eric H. Miller, Solatube International, Inc.

Smart Ventilation - Minimizing Cost, Maximizing IAQ

The goal of this session is to provide the technical background for developing smart ventilation strategies and to provide concrete application examples. As we move to high performance housing and especially toward zero- energy homes, ventilation represents a larger and larger fraction of the space conditioning energy requirements and more homes are meeting IAQ standards such as ASHRAE 62.2. Higher indoor air quality (IAQ) performance, as well as lower HVAC power and energy consumption, can be achieved by being smarter about how and when ventilation occurs.

This session will discuss smart ventilation strategies, such as increasing ventilation when the outdoor temperature is less extreme, scheduling ventilation during off-peak hours, avoiding ventilation during periods of poor outdoor air quality, and reducing whole house ventilation operation in response to incidental ventilation (e.g., bathroom or kitchen fan operation) and occupancy. The impact of these smart ventilation strategies on IAQ and energy use will be discussed together with recent and future commercially available approaches to adopting these strategies.

Presenter: Iain Walker, Lawrence Berkley National Laboratory

I'll Have a Tight House, Please ... and Hold the Foam

Used to be that a few cans of convenience foam could be considered an air sealing strategy. Today, a number of issues-from ever increasing building tightness standards to liability concerns about spray foam-are driving builders to consider alternative air sealing strategies. Using results from laboratory and field research, this session will help builders and raters to understand common leak paths, their comparative importance, and how to devise cost-effective air sealing strategies that will meet even the most stringent requirements.

Presenters: Dan Lutz, Knauf Insulation; Ken Levenson, 475 High Performance Building Supply ; Alan Sealock, Huber Engineered Woods and Dave Wolf, Owens Corning

The 5 Best Ways to Botch a Duct Design

In this session, we'll explore the 5 most common ways a great house ends up with horrible performance due to poorly designed ductwork. This course is not about software. It's about decisions that should be made, but often aren't. It's about fundamental design principles that are misinterpreted or misunderstood. It's about the false belief that high-end equipment makes good design unnecessary. It's about the oversimplification of the design process for the sake of making things "easier." join us for a lively session about good people, with good intentions, making bad choices about their HVAC system's ductwork.

Presenters: Isaac Savage, Home Energy Partners

Multifamily Blower Door Testing

This session will cover common testing standards used when testing multifamily buildings. In addition, the presenter will discuss the different testing methods and equipment options for testing individual units, multiple units at a time, or the whole building. There will also be a discussion of using the TECLOG3 software to control multiple blower door fans.

Presenters: Paul Morin, The Energy Conservatory

Sim-Building: An Innovative Approach to Teaching and Learning About Building Science

Sim-Building is a National Science Foundation funded project to develop a game-based simulation to teach building science. Underlying the simulation is powerful software with the critical innovation of the use of advanced multi- scale building simulation methods to generate realistic hygrothermal data, to support the game mechanics, and to produce compelling visualizations (e.g., virtual infrared thermograms) and allow students to explore concepts in heat, moisture and air-flow in buildings in a game-environment. This session will introduce participants to the free software that is being developed and explain how to use it in classes. Amanda Hatherly is a Principle Investigator on the grant and runs the EnergySmart Academy at Santa Fe Community College.

Presenter: Amanda Hatherly, Santa Fe Community College

Maximum efficiency = Maximum living

As the 2015 International Energy Conservation Code (IECC) continues to push the industry to

create tighter building envelopes, today's professional energy experts are increasingly seeking sound solutions that deliver energy-smart and cost-effective performance. In today's market, using the right products and leveraging industry expertise has never been more important to the success of HERS raters, energy experts and builders.

Expert panelists, consisting of an architect, HERS rater and building scientist, will explore best practices and relevant insights from case studies to help attendees identify materials, solutions and energy-smart design strategies that achieve maximum efficiency performance in a home. Ultimately, attendees will walk away with new information to help build for maximum efficient, resulting in maximum living.

Moderator: Gord Cooke, Construction Instruction
Presenters: Stuart Cline, architect; Thomas Porter Architects: Steven Sutter, Energy Performance Partners; Bill Rectanus, New Town Builders and Clarke Berdan, Owens Corning

The Good, the Bad and the Ugly of Combustion Safety Diagnostics

Are standard combustion safety diagnostics under worst-case conditions accurately identifying cases that could produce a hazard and require remediation? Or, are the diagnostics creating many failures where there are few and potentially ignoring more common, less severe failures? Is this focus resulting in unnecessary testing and expensive repairs of appliances that pose little to no hazard? In this session, we will tell you! We will summarize recent and ongoing field studies aiming to better understand the factors and conditions that increase the risk of elevated air pollutant exposures from combustion appliances. We also will provide practical advice for efficiently minimizing combustion hazards when air-sealing homes.

Presenter: Brett Singer, Lawrence Berkeley National Laboratory and Larry Brand, Gas Technology Institute

The Devil is in the Details: Designing Wall Systems for Energy Efficiency and Moisture Resiliency

As building, energy and green codes become more stringent, new building technologies and innovations are being incorporated into the building envelope. When incorporating new technologies into building assemblies traditional construction practices need to be adapted.

However, as these adaptations of construction practices take place they still need to maintain adherence to basic principles of barrier continuity, moisture management and durability. This presentation will describe some of the water management challenges and choices that arise when increasing the thermal performance of walls. The presentation will include a review of the progress of industry standard practice and guideline development on the development of details to maintain air, water and thermal barrier continuity and integrity.

Presenter: Theresa Weston, DuPont Building Innovations

Tighter, Quieter, Warmer: Comparing Building Tightness Between Blown-In and Batt Insulations

With building tightness standards continuing on a downward trend (can you believe 3 ACH50 will be a standard requirement for large parts of the country as soon as 2015?), builders continue to seek feasible and cost-effective strategies for building tight enclosures. This session is focused on research, recently completed for the Energy Trust of Oregon, which compares the difference in

tightness between a set of houses insulated with a blown-in system and a set of houses insulated with batts. In addition to highlighting the study's design and results, this session will address the acoustics and thermal benefits of a blown-in system and why one builder won't use anything else.

Presenters: Dan Wildenhaus, CLEAResult and Dan Lutz, Knauf Insulation

2x6 Advanced Framing: Maximizing the Value & Efficiency of Wood Wall Systems

As builders seek to meet more stringent energy codes while maintaining the structural integrity of their homes, many are turning to Advanced Framing. This is the name given to a variety of techniques that increase whole wall R-values, while maintaining the strength and stiffness of the building. One of the most common techniques is the use of 2x6 studs placed 24" on center. Advanced Framing may also include techniques such as ladder junction intersections, energy efficient corners, insulated headers and single top plates, among other things. Whereas Advanced Framing was developed in the 1970s, today's strict energy codes are driving new interest by builders and designers in the area of wall construction methods. Advanced Framed 2x6 wall construction addresses not only energy efficiency, but also cost-effectiveness and, with the right components adds disaster resiliency to the structure. Advanced Framing also provides methods for meeting Energy Star and various green building programs. This program will provide attendees with information to thoroughly understand advanced framing and how to take credit for the efficiency savings in the HERS rating. Real-life case studies will be shared that demonstrate the cost-effectiveness of the system, as well as the increases in energy performance that can be attained. Builders, designers, and framers will appreciate the approach that any of the advanced strategies shown can be applied individually or together, making implementation easier.

Presenter: Matthew Brown, APA

Ventilation is coming – deal with it!

This session will cover ventilation requirements and products designed to help minimize the unintended effects of meeting those requirements.

- Ventilation requirements – what they are (ASHRAE, codes, Energy Star for homes, etc.)
- Consequence of ventilation is added heating/cooling load and/or humidity
- How to meet ventilation requirements while minimizing consequences and maximizing comfort?

Presenters: Scott Grefsheim, AprilAire

Mechanical Air Distribution and Interacting Relationships

In the pursuit of the high quality, tight, super insulated, and energy efficient home, we might have built in problems that can be so elusive and hidden that the best of contractors only come away with stress-related illness rather than the answer that spells RELIEF. These are words I wrote in 1986 in a paper titled MAD-AIR. Our code has changed air tightness and insulation levels with better installation. These changes may have exposed us to a much madder MAD-AIR. We will compare 1986 to today and discover the changes and their effect on the house system. If you design, work on, rate, or assess retrofit needs this is a must see presentation.

- You will learn where doing the right thing right can be the wrong thing to do. Receive the 1986 MAD-AIR paper.
- You will learn how to measure and predict MAD-AIR

- You will learn how to remediate MAD-AIR
- You will learn how to design to reduce the effects of MAD-AIR

Presenter: John Tooley, Advanced Energy

Multi-Family Building Envelope Solutions

Effective and efficient building envelope assemblies will be discussed in terms of multi-family options to meet the 2009 and 2012 IECC. Up front investment in the assembly can potentially maximize operational returns especially for developer owned rental properties. Options and benefits will be discussed from design, construction to occupancy.

Presenters: Linda Jeng, Brian Lieburn and Dan Tempas, Dow

Business Development and Marketing

Best Ideas of the HERS Industry – Insulate America and RESNET Awards Program

What would you pay to take home 30-40 successful ideas from your peers? Our price is $20 and it is a steal. All Rating Companies are encouraged to share their best ideas with the group, something that was innovative or made a difference in your company. The top three ideas, as judged by the attendees will split the proceeds. Everyone is welcome at $20 per attendee.

Everyone is A Salesperson

One of the hallmarks of the successful person in every field is that he is influential and persuasive in his interactions with other people. He has the ability to get other people to cooperate with him to achieve his goals and fulfill his aspirations. The truly successful person is the one who can influence the greatest number of people in a common direction to help him get more of the things he wants in life.

We're going to discuss:

- *A* fundamental principle of all sales
- "ABC Theory" of human motivation
- Focus on the GAP
- Key points in GAP Analysis
- Questions to How to ASK YOURSELF
- How to pinpoint dissatisfaction
- GAP Analysis

  and more!

Presenter: Lee O'Neal, MABTEC

How to Build Your Business with EnergySmart

In this session, energy professionals will be given the sales tools and resources that will improve their business opportunities leveraging the EnergySmart Builder program. Performance contractors, sales reps, and HERS raters will learn how to capture new builder accounts by educating their sales teams. Many contractors focus on selling their services to the purchasing agent, when they should be focused on converting the people who sell the homes! Demonstrate how EnergySmart Builders can differentiate themselves in a competitive market as you help them improve the customer experiences, generate new leads, and increase sales contracts leveraging HERS ratings.

Now is the time to act! Implement effective new strategies that will help your grow your business AND help your builders thrive in a tough economy.

Presenter: Todd Gamboa, Building Trust LLC

How to Snag the Big Fish - Getting Developers Bought in to Community Certification Programs

Approaching builders individually can be challenging for Raters, especially in a new market. Capturing an entire builder group provides efficiencies and volume to grow your business.

Getting a developer to incorporate energy or green certification programs into their community requirements can be a game changer, for the builders, the developer and the Rater involved. In this session we will explore 2 case studies of master planned communities that incorporated energy and green programs into their builder group requirements, the effect that has had on sales for the builders especially through the 2008 recession, and the change it had on the mainstream builder market in the NC Triangle area. We will also discuss what not to recommend to developers when trying to design a system they will like and that works.

Presenters: Jamie Hager, Southern Energy Management; Laurie Ford and Shannon McSwiney Newland Communities

RESNET Cross Border Builder Challenge President's Award winners review their HERS commitment and the value of being the first winners in Atlanta

It's been a year now. Last year's President's Award winners, KB Home and Brookfield Residential each will review winning their awards at the Atlanta RESNET Conference. Both builders will present how they utilized the awards to support their corporate sustainability message plus enhance their commitment to HERS rate their homes and the benefit it provides them. The session will be hosted by CRESNET President john Godden, who proposed the original Challenge to RESNET Executive Director Steve Baden.

Presenter: John Godden, CRESNET

Social Media Essentials: A Guide for RESNET Members

When used strategically, social media can be an incredibly powerful marketing tool, getting your message out exactly where it needs to be: directly to consumers. But what is social media and how does it work? In this session, RESNET's digital consultants, Fourth Dimension will talk about what social media is and how RESNET is using to promote member services and educate homeowners about the benefits of HERS Ratings. RESNET members can learn how they can take advantage of RESNET's ongoing social media campaigns to market their services effectively to their target audiences.

Presenters: Dru Vagale and Rejoy Chatterjee, Fourth Dimension

What Are Builders Are Looking for in a HERS Rater?

The largest customer for HERS rating is homebuilders. What are builders actually looking for when they contract with a certified RESNET HERS Rater?. This session will feature both national and local builders that will explore the builder's perspective of services and experience a rater must have.

Presenters: Kelly Stephens, SunRiver St. George and Jim Petersen, Lennar

Successful Lead Generation: Tips & Hints from Raters Making it Work

This session will feature a panel of raters that are successfully leveraging specific tactics to drive leads and grow their businesses. The format will be highly structured, with a practitioner individually covering a specific lead channel: paid internet advertising, social media, referral programs, other inbound strategies, and more. We'll share best practices, the practical reality of keeping up, and specific approaches to how to resource these activities for maximum ROI.

Presenters: Peter Troast, Energy Circle (moderator) and Jeff Rhodin, Sustainable Energy Analytics

Understanding and Wrangling Customer Reviews

Reviews have built and broken businesses. Only growing in popularity, sites like Google My Business, Google+ Reviews, Yelp and Angie's List are easier than ever for your potential customers to use and access. What's more, these sites are consistently showing up above most business' organic search listings. If you haven't been paying attention, you should now. In this session, we'll learn which review sites are the most important, best practices for growing reviews, tactics for handling negative reviews, and the things you may be unwittingly doing to negatively impact your standing.

Presenter: Peter Troast, Energy Circle

You're Not in Kansas Anymore: Communicating Building Science to Non-Technical Audiences

As a rater or auditor your success is in part dependent on your ability to communicate a variety of technical concepts to non-technical audiences. The builder or the home performance contractor understands the building science issues that support efficient and sustainable construction methods and materials, but what about all the other people the value chain? Are you making the most of this opportunity? Hear education and marketing experts discuss proven and effective ways to deliver these key concepts to the following audiences: homeowners, lenders, appraisers, contractors, building products suppliers, HVAC equipment suppliers, realtors, inspectors. This presentation looks at ways of communicating building science to non-technical audiences, what kinds of tactics and tools work to motivate action, what level of technical information is suitable, and how it is all best presented.

Presenters: Shawna Henderson, Blue House Energy and Bethany Profaizer, Energy Circle

Home Energy Ratings

Creating Consistency: Uncovering the REM Inputs that are Screwing Up Your Ratings

Through our work as a national RESNET *QA* Provider, EnergyLogic consistently runs into 1/10 *QA* files that fail their *QA* reviews due to huge HERS swings caused by seemingly trivial REMrate inputs. This session will uncover these Most Valuable Player REM/Rate inputs to help raters focus efforts on creating consistent, repeatable, and highly accurate HERS ratings in the future. Incorporating these techniques into your rating workflow will not only help you pass your annual QA more consistently, but will help guide the industry to more repeatable HERS scores throughout the country.

Presenters: Tom Flanagan, and Glenn Pease, EnergyLogic, Inc.

Grid-Friendly Ratings: The Future With Renewables

Electric utilities are steadily adding centralized and distributed renewable energy generation to their systems. While renewable energy reduces fossil fuel use and carbon production, the intermittent nature of these systems brings new challenges to the electric grid. Buildings will play a critical role in enabling more renewable energy in our electric generation mix. This session will provide an overview of the issues higher penetrations of renewables present for electric utilities, how buildings can help, and what this may mean for the HERS industry. If you work with electric utilities, or leverage their programs, you won't want to miss this session; you'll gain critical insights into how their future programs may affect your work.

Presenter: Dave Roberts, NREL

RESNET Sampling and Beer -Know the Rules (and Know Your Limit)

The RESNET Sampling Standard can be a challenge to understand even for veteran raters and providers. It is even more challenging to apply it in the real scenarios you face in the field. It is something best understood with experience and practice. But how do you get practice before you train your staff, your builders, and their trade partners on the intricacies of what is required? Will you remember that part about "multiple additional failures?"

Teaching the RESNET Sampling Standard can be as grueling as trying to learn it. Since things seem to go better with beer, we'll use a beer tasting analogy to turn RESNET Sampling into a more fun topic to learn and discuss. This session will apply the RESNET Sampling standard to a beer sampling game…and yes volunteers get to taste some foamy beverage goodness. Cheers!

Presenters: Scott Doyle and Glenn Pease, EnergyLogic

Bringing Professional Practical Testing Into the 21st Century - The RESNET Simulation Based Rater Practical Test and the Rating Field Inspector Tablet Mentoring Tool ***(Rater Trainer Roundtable)***

There are number of problems with field based practical tests, chiefly replicability and consistency among all students. To address these issues RESNET will be introducing a new set of technologies to test the practical knowledge of certified RESNET HERS Raters and Rating Field Inspectors.

The rater test will be a simulation based test jointly developed by Interplay Energy and RESNET. The platform will be similar to the RESNET CAZ simulation test. RESNET standards require that

beginning on January 1, 2016 all new rater candidates must pass the simulation examination.

Currently RESNET tests Rating Field Inspector Candidates through a multiple choice online test. This has many serve limitations including multiple tests are not really effective for testing practical knowledge of a candidate and many of Rating Field Inspector candidates have English as a second language.

This session will explore why RESNET has adopted this strategy and have the test developers demonstrate their tests.

Presenters: Kathy Spigarelli, RESNET; Doug Donovon, Interplay Energy and Rob Moody, Organic Think

Multi-Family Certifications: Learning The Hard Way

This session will highlight three examples of potential pitfalls, while providing insight into additional opportunities to integrate RESNET-based protocols and HERS rater services. Example projects will include Energy Star Multi- Family High-rise, LEED for Homes Mid-rise, and Enterprise Green Communities.

The panel will consist of a HERS rater/provider and a HERS rater/architect.

Presenters: Laureen Blissard, Green Builder Coalition and Barb Yankie, Green Building Consulting/Homes+

The Solar Industry and the HERS Index - A New Marriage

On-site solar production is accounted in the RESNET HERS Index. Solar must play a critical roll towards the net zero energy home. With the Energy Rating Index now a compliance option of the 2015 IECC the HERS Index can be a strategy for builders using solar as a compliance tool. This session will have the nation's largest solar companies explain what ratings fit into their industry and how raters can partner with the companies.

Presenters: Walter Cuculic, Solar City and Troy Bevilacqua, SunPower

Rubber Meets the Road: RESNET's New Rating Field Inspector Certification Field Assessment App

RESNET's new app is used in tandem with a mentorship program for Rating Field Inspectors (RFI s) and the residential workforce (currently for insulators, air sealing and weather resistant barrier installers). Come meet the successor to the RFI multiple choice exam, aimed at improving the job where it really counts: in the field. Mentors note feedback and capture images of RFI s and installers performing tasks. The secure responses live in the cloud and represent a record of quality assurance and a candidate's job proficiency. The app contains a text/photo/video library of best practices and is an agile way to distribute new practices and critical details to crews.

Presenter: Rob Moody, Organic Think Inc and Steve Byers, EnergyLogic

Turning "HERS Rating" into "HERS Designing"

The designation "HERS Rater" implies that the rater joins the party after all the design work is

done, verifies that the home has been built as designed, and pins a HERS score on the project. If this were the way it always worked, builders would be left guessing at effective energy designs and crossing their fingers for good HERS scores. In reality, the HERS Rater usually plays a combination role of Rater and Energy Design Consultant. This session will suggest an improved "HERS Design" workflow where those familiar with the HERS Standards would help builders optimize their designs to achieve the desired HERS Scores and required code compliance. Specific workflow suggestions and data on their effectiveness will be presented based on the experience of builders, HERS Raters/Providers, and HERS Software Providers.

Presenters: Cy Kilbourn, Ekotrope and Michael Browne, Advanced Building Analysis

Air Flow Diagnostics and RESNET Standards

Air flow diagnostics are an important part of a rating but are also useful diagnostic tools for energy auditors. They are also increasingly required in building codes and standards as well as voluntary programs. Although air flow measurements have been around in the HVAC industry for many years, in recent times it has been found that many of the test methods do not work well in residential applications and this has led to the development of new test equipment and procedures. This session will illustrate some of the performance issues (both good and bad) for a range of air flow diagnostic equipment and procedures with laboratory and field data. It will also summarize the new RESNET 380 Standard on air flow diagnostics and the new ASTM Standard for rating test equipment. Lastly, this session will provide recommendations for preferred test methods and equipment depending on the application: house leakage, duct leakage, and heating. cooling and ventilation system air flows.

Presenters: Chris Stratton and lain Walker, Lawrence Berkley National Laboratory

Raters - Things to know about HVAC?

Can you verify key performance aspects of an HVAC system installation? Heating and cooling costs are the lion's share of every homeowners energy expenses, but very little is done to evaluate the system installation. There is more to system than testing duct leakage, equipment efficiency, and sizing. In this session you will learn about:
1) The impact of poorly installed systems on performance and energy use,
2) Non-invasive tests you can do, and,
3) steps you can take to ensure HVAC contractors are delivering what your customer paid for.

Presenters: Wes Davis, Air Conditioning Contractors of America

NATE Rater HVAC Verifier Certification- A New Opportunity for Raters

Increasing programs such as ACCA and ENERGY STAR are requiring verification of the sizing and installation of the HVAC system. They are looking to certified RESNET HERS Raters as logical candidates to complete this verification. The knowledge to conduct such verification activities are not covered in the basic rater training and testing. To address this issue NATE as adopted a new certification, the NATE Rater HVAC Verifier Professional. NATE has also developed a test that must the passed in order to receive the certification.

Because this expertise is not covered in the basic rater training HERS raters will need additional training to pass the NATE test. To meet this need RESNET is developing training curriculum and material that RESNET accredited Rater Training Providers can use to offer the

needed training.

This session will describe the new NATE certification and demonstrate the supporting training support material.

Presenters: Kathy Spigarelli, RESNET, Dennis Stroer, CalcsPlus and Brett Dillon, IBS Advisors

What is the value of a HERS point?

Many builders target low HERS scores rather than building to code-minimums, but what are they getting in return? And how low can they go while still increasing profit? This session will analyze the true value of lower HERS scores using several metrics and data from real builders across the country. The metrics will include energy savings for homeowners, NPV to homeowners, added cost for builders, and profit change for builders. Attendees should leave with an improved understanding of how the HERS score can help increase the profitability of home building businesses.

Presenters: Cy Kilbourn, Ekotrope

Quality & Quantity: Maintaining a Quality Rating System When Your Business is Scaling Up

Quality Over Quantity: It's an age-old adage...however, they do not have to be competing forces if paired with proper planning. Landing larger clients can afford an owner/operator with the opportunity to make smart growth decisions. The alternative is to choose to do things the way they've always been done - which can be messy, especially when adding employees. This fun and informative session will provide attendees with tips on smart growth decisions - and will be especially helpful for owners who are looking to scale up or who are interested in learning about new ways to streamline the rating process. Topics to be discussed include: tips on quicker from-plans takeoffs, maximizing schedules, time-saving tips in REM Rate, best practices for streamlining the process of site inspections, tips on system integration, and balancing client management with customer service. Regardless of the size or growth of your company, we know you'll come away with some great tips.

Presenters: Robby Schwarz, EnergyLogic; Steve Byers, EnergyLogic and Glenn Pease, EnergyLogic

Mentor Early, Mentor Often

By emphasizing early mentoring and communication with participating Raters and Builders, savings are realized in downstream Quality Assurance. Mentoring is not just a tool for training technical skills and program compliance, but also establishes a valuable feedback loop in refining the program itself.

Over the past 7+ years, PSD has refined its dependency on mentoring as a way of increasing program quality and enhancing communication. Best practices for scheduling, shadowing, training, and scoring participant performance will be discussed. Real results and trends will be discussed.

Presenters: Ethan MacCormick, PSD

Projecting Total Energy Use – How Good Are We?

MaGrann Associates has been analyzing data from hundreds of homes that have been participating in a utility sponsored HERS-based new construction program where they were given access to actual 12-month usage data. The analysis has provided insights into how closely ratings have predicted

total energy usage in aggregate and on the individual home level, for both electric and gas, as well as the demographic and behavioral factors that may be impacting the results.

This session will also discuss trends in home energy usage that are influencing the total bill, especially those end uses not directly linked to the “asset” part of the rating (plug loads, occupant behavior, etc.). This is fascinating stuff with potentially profound learnings for raters and the rating industry, energy guarantees and beyond… for example, what would happen if we encouraged homeowners to share their post-occupancy data in tandem with the rater registry and other innovative ideas.

Presenter: Ben Adams, MaGrann Associates

Help is on the Way—Kicking the RESNET National Registry Up a Notch

The RESNET National Registry has proven to be a vital depository of information collected through the energy rating of homes and has the potential of being a treasure trove of data on the energy performance of homes in the US. It has also great potential in enhancing RESNET quality assurance oversight of HERS ratings. RESNET will be enhancing the capacity of the Registry and the capability to extract even greater characterizations of rated homes. This session will introduce the enhancements to the RESNET Registry and discuss what improvements could make it even more robust.

Presenters: Philip Fairey, Florida Solar Energy Center and Steve Byers, EnergyLogic

Real Estate, Finance and Programs

High Performance Homes Recognition in the Multiple Listing Service

In real estate a green built, energy efficient or high performance new home or retrofit is essentially invisible to the consumer if the MLS covering that market does not support green fields. Studies on energy benchmarking of commercial properties have revealed a simple truth: when information is disclosed to the market, the market has the opportunity to react to that information. Market reaction can be reward or punishment – that is the nature of a free market, but either way the consumer then can choose between homes based upon their identified health, resource efficiency and environmental features. Transparency determines the ability to identify market reaction, which lies at the heart of both real estate investments and valuation.

This presentation will tell the story of the "greening" of the three major MLSs in the Pacific Northwest and what lessons can be applied to Cincinnati, Ohio, and the Midwest The presentation will provide an overview of systems that must be in place in order to begin the process of greening the MLS, the significant and ongoing role of education, how to ensure the green features on the MLS are accessed and used once they have been added, and how valuation research is informing the real estate industry.

Presenter: Fiona Douglas-Hamilton, SEEC LLC

The Appraisal Institute's Green Addendum and the HERS Index Score

RESNET and the Appraisal Institute have entered into an agreement to allow RESNET certified Home Energy Raters to complete the Green Addendum. This session will explain how to complete the form and the market power of the addendum.

Presenters: Sandra K Adomatis, Adomatis Appraisal Service and Lance Coyle, Appraisal Institute

Threading The Needle

The undervaluation of energy efficient homes is a multi-layered problem. Without changes in HUD guidelines, the underwriting process puts more weight on the price tag of a home than the lowered monthly utility bills. Even with a positive cash flow, many are challenged to obtain a mortgage. How can the industry help reconcile code compliance, appraisals and financing? Our panel of experts will investigate this.

Presenters: Bill Fay, Energy Efficient Codes Coalition; Mike Collignon, Green Builder Coalition; Michael Hobbs, PahRoo Appraisal & Consultancy

Residential Energy Guarantee - Eliminate the Small Print

Building energy efficient homes and marketing the benefits to homebuyers with the HERS index can help you sell more homes and sell those homes for more. But when the lawyers make you add the "small print" disclaimers that water down the benefits of your energy efficient homes you may be losing the full opportunity from your efforts. This session will introduce you to the revolutionary new Residential Energy Guarantee and show you how this program can enhance your hard work by eliminating the "small print".

Presenter: Roger Lange, Bonded Builders Warranty Group

Making the Federal Tax Credit for Energy Efficient Homes More Relevant to Today's Housing Market

The $2,000 federal tax credit to builders for building energy efficient homes expired in 2012. The previous version of the tax credit was based on the 2006 IECC and is dated. The 2015 IECC now has an Energy Rating Index compliance option. RESNET, the Leading Builders of America and the Natural Resources Defense Council is working on legislation to make the tax credit functional by tying it to the 2015 IECC Energy Rating Index option. This session will explain the proposed legislation and what will need to have it enacted.

Presenters: Carl Chidlow, Winning Strategies Advocates, David Goldstein, Natural Resources Defense Council and Clayton Traylor, Leading Builders of America

Touchstone Energy Existing Homes Upgrade and Labeling Program Linked to HERS Index

There is a myth that the HERS' Index value is restricted to only new homes. Touchstone Energy Cooperatives did not fall for it At the Midwest Regional Energy Conference in Lexington, Kentucky it was announced that the network of electrical cooperatives will be launching the "TogetherWeSave Energy Smart Home" label for existing homes whose energy performance has been approved to at least a HERS Index Score of 90.

The existing homes labeling feature is part of suite of the home performance program offered by Touchstone Energy's TogetherWeSave initiative. The electric cooperative program offers a progression of energy services including:

- An online do-it-yourself audit tool, "Home Energy Savings Tour". If the home is found to benefit from approvals, the homeowner is led to the next level;
- A clip board walk through energy audit conducted by a cooperative's energy advisor. If the audit finds the home a candidate for a whole house retrofit the homeowner is led to the next lever;
- Whole house comprehensive energy audit including performance testing;
- For homes that are retrofitted and are demonstrated to achieve at least a 90 HERS Index Score the home is labeled as a TogetherWeSave Energy Smart Home.

The program was developed through a partnership between Touchstone Energy and RESNET.

The program is a user friendly comprehensive retrofit program that results in the retrofitted home being rated and labeled. The program begins at a simple level and leads the consumer to a whole house energy improvement The HERS Index Score label at the end of the process allows recognition in the mortgage process when the home is sold.

This session will introduce the program and explore how it boost the energy performance of existing homes.

Presenters: Roy Honican, Blue Grass Energy and Alan Shedd, Touchstone Energy Cooperatives

Implementing Sustainable Building in Affordable Housing

A lack of quality affordable housing remains one of the most critical problems facing

metropolitan regions across the country. Over 6.5 million low-income families spend more than 50% of their incomes on housing and utility costs, according to the National Low Income Housing Coalition. Sustainable building plays an important role in providing safe, healthy, durable, accessible, energy efficient, and affordable homes to a segment of the population most in need. Join us for a discussion about how Habitat for Humanity International and its affiliates continue to push the envelope by building homes that achieve certifications such as ENERGY STAR, EPA Indoor airPLUS, LEED for Homes, and Passive House while maintaining affordability.

Presenters: Rob Howard, Habitat for Humanity International and Monte Morris, Habitat for Humanity Sacramento

Energy Savings in Multi-Family Common Space: The Next Frontier and Opportunity

More multifamily housing is being built than ever before, with amenities such as screening rooms, exercise studios, etc. in addition to the familiar function spaces, corridors, and laundry rooms. Although common space accounts for 20-30% of a multifamily project, it is frequently underserved by energy efficiency incentive programs and ignored by building developers, Raters, and even energy codes. This session will present a utility incentive program case study and address how it:

- Expanded opportunities for Raters.
- Provided an economic advantage for multifamily developers.
- Increased cost-effective energy savings for the utilities.
- Achieved more than 50% market penetration.
- Successfully coordinated savings and incentives for multiple fuel and meter types

Presenters: Nathaniel Dick, NSTAR Electric & Gas Company; David Ruggiero and Kristen Simmons, ICF International

Program Designs- Energy Saving Program (ESP)

As we look to ahead, high levels of energy efficiency are part of new building codes. Energy efficiency program administrators are looking for creative ways to position programs for this new environment Program administrators will be looking for ways to both broaden participation, by reducing and removing barriers to participation, and by incentivizing more projects to reach high levels of energy efficiency. We will examine savings based program designs used in Oklahoma and Arkansas and look at results from a state wide energy savings pilot program in Massachusetts.

Presenters: Michael Berry; Steve Ellison and Peter Hubbe, ICF International

Education vs. Training - Let the debate begin

As RESNET evolves to meet the demands of changing markets, new and existing RESNET professionals must gain new knowledge, skills, and abilities (KSAs). Do they gain these KSAs through Education or Training, or both? Does Education and Training come from Certified Trainers or QADs?

This session will debate the differences between education and training, the pros and cons of each approach, and what RESNET's requirements should be for certification, Trainers, and QADs. Let the debate begin!

Presenters: Brett Dillon, IBS Advisors LLC and Dallas Jones, Green Training USA

Making Green Pay: How Builders, Raters, and Appraisers Can Maximize Returns, Results, and Value

Every wonder why there is so much paperwork, communication, and information needed to get a high performance project built, verified and closed? How can the process be streamlined and create additional financial rewards for raters, builders, appraisers, and the community? With new technologies and information we will show you how to eliminate costly mistakes in product selection, information flow, and accuracy will cutting the it takes to insure you get the most money, performance, and efficiency in every project.

Presenter: David Carolan, Solid Green Companies and Todd Ebner, Solid Green Companies

ENERGY STAR and Zero Energy Ready Homes

Have We Got a Label For You: Intro to Federal Programs

In the future, every new home built will have little to no utility bills, with unmatched comfort, superior indoor air quality, and high-performance water-conserving fixtures. But why wait? Learn how a suite of government-backed programs: ENERGY STAR Certified Homes, Indoor AirPLUS, WaterSense, and Zero Energy Ready Homes can lead you to the future today. These voluntary, yet rigorous, high-performance home programs chart a course through a rapidly evolving housing landscape to ensure you get the most out of every dollar invested. A brief overview of each program will demonstrate the value that it provides and how all of the programs are fully aligned for easy builder participation.

Presenters: Dean Gamble, U.S. EPA; Sam Rashkin, U.S. DOE; Jonah Schein, U.S. EPA and Bob Axelrad, U.S. EPA

ENERGY STAR and Zero Energy Ready Homes: The Year Ahead

Come be the first to learn what's in store for 2015 for ENERGY STAR and DOE Zero Energy Ready Homes. On the ENERGY STAR front, get a sneak peak of Revision 08, which promises to make certifying a v3 home easier than ever before, and receive other key programmatic and marketing updates. For DOE Zero Energy Ready Homes, learn how a completely reinvented Building America program will be generating critical innovations that effectively manage the significant risks facing the housing industry as it moves to increasingly high-performance homes.

Presenters: Dean Gamble, U.S. EPA and Sam Rashkin, U.S. DOE

Stepping up from HERS to ENERGY STAR

Home Energy Ratings are on the rise. This is a great new trend, but high-performance homes are more than just a score. Learn how an ENERGY STAR Certified Home builds upon a standard HERS rating to ensure that efficiency is achieved without compromising comfort, quality, or durability. Come away understanding what key components go above and beyond a HERS rating, their relative cost and value, and why stepping up to ENERGY STAR may be easier than you think.

Presenters: Dean Gamble, U.S. EPA and Rick Gazica, ICF International

Stop the Madness: Locating Ducts in Conditioned Space

Raters don't like it. Energy codes penalize you for doing it. And in DOE Zero Energy Ready Homes -- we just can't accept it. Ducts carrying cool, comfortable air in the 50s just don't belong in a 130F degree attic with a mere 2" of insulation as a buffer.. The same is true of comfortable heated air in cold attics during the winter. The good news is that optimizing ducts isn't a one-size-fits-all design requirement in DOE Zero Energy Ready Home. Over the last several years, DOE's Building America research program and its partners have worked out the kinks on a toolkit of flexible duct design strategies. In this session you'll learn the pros and cons of these strategies so you can specify distribution systems which are effective in any type of project.

Presenter: Jamie Lyons, Newport Partners, LLC

Meet the Home of the Future: Zero Energy Ready Homes

HERS scores have swept into the housing industry providing a widely recognized "MPG" for homes. But a car's performance doesn't end there… and neither does a home's. As DOE establishes a label for Zero Energy Ready Homes, what specifications ensure both energy efficiency and performance?

As we move into HERS 60, 55, or lower homes… how do we ensure adequate moisture management, IAQ, and combustion safety in addition to the home's efficiency? In this session you'll hear from DOE and a leading Rater how the DOE Zero Energy Ready Home specs provide a systems-based path that delivers the home of the future… today. Content will include the specifications for DOE Zero Energy Ready Home, and tips/tricks of rating and qualifying homes.

Presenter: Jamie Lyons, Newport Partners, LLC and Robby Schwarz, EnergyLogic

More Science, Less Art: Successful HVAC Design

Many mistakenly believe that HVAC design is completely within the eye of the beholder. In fact, successful HVAC design relies less on art, and more on science. Why should you care? Because a successful HVAC design means confidence that your system will be more comfortable, with fewer callbacks, without wasting money.

Come learn the fundamentals of HVAC design - calculating heating and cooling loads, selecting equipment using those loads, and laying out a distribution system that works with that equipment. Finally, hear from an expert who's transformed his process from art to science and what a difference it has made.

Presenters: Dean Gamble, U.S. EPA and Charlie Haack, ICF International

Water Efficiency and IAQ – The Next Frontiers in Whole Home Performance

Indoor airPLUS, a companion label to ENERGY STAR, is the easiest way to get a leg up on your ENERGY STAR competition for 2 simple reasons:

- It carries a value-added message centered on indoor air quality for occupants; and
- It can be verified using the same process and site visits as ENERGY STAR.

WaterSense rounds out the third key element of EPA's voluntary new homes programs, providing builders and Raters with:

- An opportunity to sell homeowners on both the value AND convenience of a water-efficient home; and
- A simple way to complete the "green home picture" for the homeowner, using trusted, government-backed labels.

Join this session to learn about the key features of Indoor airPLUS and WaterSense homes and how builders and Raters have incorporated these programs to capitalize on these additional value propositions beyond energy efficiency. Participants will also learn about EPA's latest free marketing resources, as well as opportunities to earn national awards by building and verifying these high-performance homes.

Presenters: Jonah Schein, U.S. EPA; Bob Axelrad, U.S. EPA and Nick Hurst, ICF International.

Getting into Hot Water: Moving it from A to B the Right Way

Hot water distribution clearly has arrived…. DOE Zero Energy Ready Homes require good systems, RESNET rating standards now address distribution, and in just the last year we've seen a wave of

new product innovations for efficient, effective recirc systems in homes. The only problem is that there's a big learning curve from traditional plumbing design practices to good delivery systems, and we collectively need to start climbing this curve. In this session you'll learn about the U.S. EPA's WaterSense spec and how it defines a good hot water distribution system. Then we'll explore design options and technologies to achieve such a system.

Presenters: Jonah Schein, Environmental Protection Agency WaterSense & Gary Klein, Gary Klein and Associates

Until They Sell Themselves: New Sales Training and Marketing Tools for ENERGY STAR Homes

As you know, ENERGY STAR has a unique value proposition for homebuyers looking for new homes. However, sales staffs have a difficult time communicating the value of energy efficiency to prospective homebuyers. As a result, EPA created and launched a new sales training kit in late 2014 available to ENERGY STAR partners to help builder sales teams become well versed in selling the value of energy efficiency. The training is intended to be presented at a builder's sales meeting over a 2-hour period. This session will review the components of the training kit and how to facilitate it successfully for your top builders. Additional new marketing tools from ENERGY STAR will also be highlighted including free customizable outreach tools.

Presenters: Amber Stewart, ICF International and Zak Shadid, U.S. EPA

Clearing the Air: Ventilation

Every ENERGY STAR certified home is required to have a complete ventilation system. Gain an understanding of the value that this system adds. Then, become versed in its three major components and discuss strategies for getting them right in every home.

After that, watch an interactive live demo of how to measure airflow using a passive flow hood, a powered flow hood, an exhaust fan flow meter, a bag inflation device, and an airflow measurement station. These five approaches align with RESNET's draft new standard and will help ensure that Raters produce accurate repeatable results.

Presenters: Dean Gamble, U.S. EPA; James Jackson, ICF International and Ashley Fowler, ICF International

Greasing the Skids: Tips for Completing the ENERGY STAR HVAC Checklists

A properly designed and installed HVAC system is a critical component of a high-performance home – it helps ensure comfort, efficiency, and durability. Yet many partners have found the ENERGY STAR HVAC Checklists to be the most challenging component of Version 3. Come learn how EPA intends to make significant improvements to the process, which will make certification easier than ever before. In addition, learn tips and tricks for achieving success with your clients.

Presenters: Dean Gamble, U.S. EPA and Rick Gazica, ICF International

Applying Effective Marketing and Sales Strategies to Zero Energy Ready Homes

We're asking builders for a lot. We're asking them to trust us that if they invest thousands of dollars into each building zero energy ready homes, that consumers will pay for the added value. DOE is vested In their builder partners' success. As a result, we have studied cutting edge principles

associated with effective marketing and selling, and applied them to all of our resources and training. At this session, you'll learn that Knowledge Matters, Words Matter, Clarity Matters, and Process Matters, and how these cornerstone principles are applied to marketing and selling Zero Energy Ready Homes.

Presenter: Sam Rashkin, U.S. DOE

High-Performance Enclosures – Is it all about the R?

Most builders have moved beyond 2x4 walls, a compressed batt, and a couple tubes of caulk for their thermal envelope strategy. But how far do we need to go with insulating and air-sealing? Are we good with our standard double pane, low E window? And equally important – how can we build to these levels effectively and avoid unintended problems with production, moisture management, and IAQ? DOE Zero Energy Ready Home establishes enclosure insulation levels anchored to the 2012 IECC and infiltration levels half those of ENERGY STAR for Homes Version 3. In this session you'll learn about implementing these specs, key design issues, and the latest recommendations from DOE's Building America program on high R value, air-sealed envelopes.

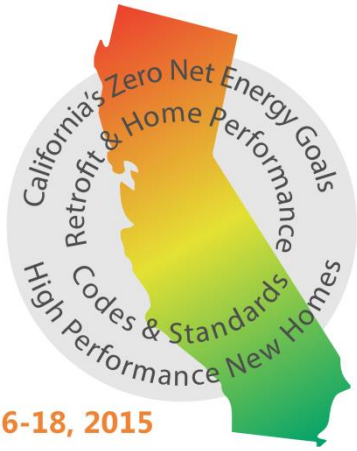
Presenters: Ari Rapport, IBACOS

Special "Not to Miss" Session

Insulate America – RESNET Best Ideas Awards

Rating companies - what would you pay to take home 30-40 successful ideas from your peers? Our price is $20 and it is a steal. All members are encouraged to share their best ideas with the group, something that was innovative or made a difference in your company. The top three ideas, as judged by the attendees will split the proceeds. Everyone is welcome at $20 per company attending (not per person). This innovative and valuable experience will be offered at a noon special breakout session on Tuesday, February 16.

2015 California HERS and Building Professionals Conference



San Diego, CA | Sheraton Hotel | February 16-18, 2015

The Differences in Home Energy Ratings between California and RESNET and the Path to Harmonizing

- **The Differences in Home Energy Ratings Between California and RESNET**
  In California, when one mentions a HERS rating, it's a requirement to clarify; RESNET or California HERS? Let's look deeper under the hood to learn the differences and similarities between these two rating indexes. We'll be comparing calculation algorithms, scoring constructs and the building simulation engines themselves. We'll also dive into the history of each system and how they're currently being used in California and beyond.

  Presenters: Jacob Atalla, KB Home; Matthew Christie, TRC Energy Services; Michael Hodgson, ConSol

- **Harmonizing Home Energy Ratings Between California and RESNET**
  California has long had a separate home energy rating system. Established by state law and governed by the California Energy Commission the California HERS is based on the state's energy code, Title 24. Large production home builders are advertising their homes RESNET HERS Index Scores. This trend could create industry and public confusion with competing HERS scales. Over the past year the California Building Industry Association, California Energy Commission and RESNET have been in discussions on how to make the California HERS and RESNET HERS compatible. This session will explore the differences and options to resolve them.

  Presenters: Jacob Atalla, KB Home; Martha Brook, California Energy Commission and Michael Hodgson, Energy Chairman, California Building Industry Association

California Market Transformation

- **Turn REALTORS® into Energy Efficiency Ambassadors**
  Every purchase of an existing (resale) home is an opportunity to integrate energy efficiency, and this matters to homebuyers. A National Association of Realtors survey found that 88% of consumers say energy efficiency is important. Furthermore, the average homebuyer of an existing home will spend over $6,000 on improvements during their initial year of ownership, according to the Joint Center on Housing Studies. These older homes, which make up over

90% of homes sales, are in the most need of energy efficiency improvements. Raters and program representatives can benefit from engaging REALTORS© as energy efficiency ambassadors since they serve as the gatekeepers to homebuyers and these transactions. However, advertising to REALTORS© is not enough; a fully integrated approach is necessary to turn REALTORS© into collaborators. This session will explore the methods that have successfully engaged nearly 500 realtors in California. Presenters will discuss outreach strategies for local real estate communities will be discussed, explore certification training and continuing education for REALTORS©, and review additional tools and ongoing support necessary to turn education into action will be reviewed. The discussion will also include currently available financing products that can help homebuyers turn their next home into an energy efficient dream home.

Presenter: Marcia Tolentino, Build It Green

- **Energy Efficiency First for Residential Solar Homeowners in California?**
  The California market for residential rooftop solar PV has increased more than fivefold since 2010, and it continues to grow despite the conclusion of California Solar Initiative rebates. The California market for home energy upgrades, on the other hand, is growing at a slower rate. While solar is often seen as the most popular choice by residential homeowners, those who invest in solar can realize many benefits from energy efficiency measures including a reduction in the PV system size needed to offset energy use. With this in mind, CSE performed research to answer the questions: Do homeowners that invest in solar also invest in energy efficiency measures? Why? (Or why not?) These answers are critical given the state's efforts to expand the residential energy efficiency market and its aggressive Long Term Energy Efficiency Strategic Plan, which calls for reducing energy consumption in existing residential buildings 30-70% by 2020. To understand the synergies between solar and efficiency in the residential market, CSE employed a combination of survey and focus groups to examine the home energy efficiency activities and underlying motivations of California Solar Initiative (CSI) participants in the San Diego Gas & Electric (SDG&E) territory. This presentation will review the results of our research, including when solar homeowners perform upgrades, what types of upgrades are being performed, and the effectiveness of required CSI audits in promoting energy efficiency before solar installations.

  Presenter: Ria Langheim, California Center for Sustainable Energy

Marketing Opportunities for California HERS Raters

- **Marketing Home Performance, More opportunities for HERS Raters**
  As a HERS rater, a lot of time and money is invested in purchasing and learning to use sophisticated instruments to complete HERS Ratings. Because HERS raters are dependent upon contractors for work it's important to identify additional services a rater can provide with your training and equipment to stay busy all year. This session will focus on additional services HERS raters can provide with and without additional equipment and certifications.

  Presenter: Aaron Husak, Balanced Comfort

- **Generating Hot Leads for Home Performance - The Coach Approach**
  California has set goals to retrofit 75% of existing homes to achieve a 30% decrease in energy consumption by 2020. National efforts to generate demand for retrofits among existing homeowners have shown mixed results, and some efforts generate hotter leads than others. CSE will highlight three different lead generation programs that directly connect interested, qualified homeowners with home performance raters and contractors, and will share the last two years' success rates. Programs include 1) the Home Energy Coach Employee Program, where employers promote and support employee participation in workshops, home ratings and retrofits; 2) Community Workshops, where 'home energy coaches' and partnering contractors provide homeowner education in neighborhoods identified by regional energy mapping to be ripe for retrofits; and 3) the Energy Efficient Demonstration Home Program, where neighbors are invited to tour upgraded homes while talking with coaches and the contractors that performed the work.

  Presenter: Laura Parsons, California Center for Sustainable Energy

Multifamily Zero Net Energy Buildings in California

- **USDA's Net Zero Multifamily Housing**
  USDA Rural Housing Service set a goal of building only net zero multifamily housing in 2009. Currently, housing built in California with funding from USDA has achieved this goal and nothing but net zero is being constructed. This presentation will inform attendees about the USDA Rural Housing Service's efforts to create a more resilient, healthy and energy-efficient portfolio of housing through its Section 514/516 Farm Labor Housing Direct Loan Program, its Section 515 Multifamily Housing Program, and its Multifamily Housing Preservation and Revitalization program. The presentation will also include sections focusing on the Single Family Housing Programs, the Energy Efficiency and Conservation Loan Programs, the Rural Energy for America Program (REAP) and Community Facilities Loan Programs that are reaching for high energy performance goals

  Presenters: Judy Moran, Architect, LEED AP and Meghan Walsh, AIA, LEED AP, USDA Rural Housing Service – California

- **Zero-Net Energy Multifamily Housing: Results From the Field**
  California’s largest energy agencies are committed to a big goal: by 2020, all new residential construction in California will be zero net energy (ZNE). This vision is already a reality for some multifamily developers – their buildings generate as much energy as they use on an annual basis. This workshop will provide a snapshot of ZNE projects through three presentations:

  - Sean Armstrong of Redwood Energy will present a survey of multifamily ZNE projects as well as the most common techniques used by builders to achieve ZNE.
  - Tushar Dutta of LINC Housing will discuss their process in completing a ZNE retrofit of a 100-unit low-income housing project
  - Abhijeet Pande of TRC will present findings from a comprehensive evaluation of a ZNE multifamily new construction project, specifically discussing whether or not the project met its goals as well as various definitions for ZNE.

Presenters: Abhijeet Pande, TRC Energy Services; Sean Armstrong, Redwood Energy and Tushar Dutta, LINC Housing

California Program Updates

- **Getting to know the California Advanced Homes Program**
  This session will feature the program managers from all the IOU's presenting and the program and answering questions from the industry,

  Presenters: Conrad Asper, PG&E; Chuck Berry, SDG&E; Darrell Brand, Southern California Gas and John Morton, Southern California Edison

- **New Pathways for Multifamily Retrofit**
  As the California Investor Owned Utilities (IOUs) close out their multifamily pilot programs and plan for 2015 and beyond, they are evolving their program designs and adding additional paths to better serve the multifamily market. This session will describe the approaches the IOUs are taking to streamline participation, bundle measures, and allow for multiyear incremental improvements in effort to expand the pool of participating property owners and program partners.

  Presenters: Jose Buendia, Southern California Edison and Elizabeth McCollum, TRC

Clean Energy Financing Driving Market Transformation

PACE financing has exploded in California and contractors are using it as a vehicle to not only provide basic services like HVAC change outs, but to expand their business models and find new clients. The last few years' of financing project data show that approximately 1/6 of projects are solar-only, 1/6 of projects include solar and energy efficiency, and 2/3 are EE-only. Despite the mediocre performance of rebate programs like Energy Upgrade CA Home Upgrade, these financing trends indicate a transformation of the EE and whole house market. This presentation will provide summary statistics on PACE program participation in CA from the last three years and will highlight some of the tools that help contractors and their customers understand and tap into PACE financing (e.g. www.energycenter.org/pace).

Presenter: Susan Davison, California Center for Sustainable Energy

Healthy Buildings

- **The CAS Dilemma- We Shall Overcome**
  CAS testing is becoming a more common requirement for multifamily utility rebate programs as well as multifamily affordable housing financing programs such as TCAC and CDLAC. The CAS testing process includes a variety of tests and depending on the property, the expense of

combustion testing can be significant, especially for post-construction test out, as 100% of appliances need to be tested and any failures need to be corrected and-retested. There is a significant challenge especially in older affordable housing properties to pass the required combustion testing. However, forethought and integrating the combustion requirements into the planned construction budget and scope can alleviate some of the financial burden.

In this session we will discuss the CAS testing process, the common technical challenges, as well as the financial, logistical and liability implications that can significantly affect the developers, construction team, subcontractors and residents. CAS testing can be a large piece of a multifamily rater's business. Understanding it and managing the client's expectations during the process is crucial for success.

Presenters: Kelsey Shaw, Partner Energy

- **What to do about IAQ?**
  Indoor air quality remains a major opportunity for companies doing whole house auditing and retrofit work. Yet despite growing health concerns amongst consumers, and increasing incidences of asthma, the challenges of capturing IAQ leads, testing homes affordably and converting to comprehensive solutions are as vexing as ever. In this session, we will discuss field experience including how to affordably test homes, what homeowners are looking for and how to develop solutions that solve air quality issues.

  Presenter: Bill Spohn, TruTech Tools, LTD

The Big-Two Measures for 2016 Title 24

Support of residential new construction builders, who are on the path the Zero Net Energy dwellings by 2020, needs to be focused on two high impact measures: High Performance Attics and High Performance Walls. There a number of approaches that a builder can take to achieve the required energy efficiency of each. However, these particular measures are challenging to achieve for two reasons; they are disruptive to construction norms and expensive. Experience from production builders already employing these measures give evidence that both challenges can be overcome. Learn more about these measures, and how utility programs are helping builders achieve code-readiness early.

Presenter: Matthew Christie, TRC Energy Services

Ensuring Strength in Every Link of the QA/QC Chain

Quality Assurance/Quality Control (QA/QC) is the backbone of accurate energy savings in utility new construction programs. The importance of QA/QC is multi-pronged to ensure that:

- Program requirements are met
- Building simulations accurately reflect plans and specifications
- Energy measures are installed to industry standards
- Program implementation is cost effective

Many stakeholders invest in upholding quality and accurate energy savings through QA/QC. Utilities invest in QA/QC to minimize risk, safeguard ratepayer funds, and to merit earnings. Providers train,

certify, and QC raters. Associations train, test, and certify energy consultants. Labeling entities establish a standard and system to differentiate quality. Are these efforts and investments measurably improving the quality of building simulation, audits and field verification? The less programs spend on QA/QC, the more they can invest in early design assistance and training to influence deeper energy savings. Traditional market impact studies focus primarily on the program impacts on participation, market share, energy savings and less on the programs' impact on a critical market actor – the rater, energy consultant, home performance professional, and contractor – collectively known as trade allies. Given increasingly complex energy codes, a drive for deeper energy savings, and net zero goals, how do we propel trade allies' expertise to enable them to support this evolution?

Presenters: Conrad Asper, Pacific Gas &Electric; Mike Hodgson, CHEERS and Mike Bachand, CalCERTS.

Multifamily Retrofit Opportunities

- **Multifamily Market Segmentation and Expanding HERS Rater's Scope of Work**
  The multifamily housing market includes a diverse suite of ownership types, decision makers, and market players, each with unique values, practices, and challenges. This session will define the different market segments and players and suggest strategies for making energy efficiency upgrades appealing to each.

  In addition to code compliance verification and whole house rating, there are a number of opportunities for HERS Raters to bring additional resources to and expand scope of work with their clients, sometimes dependent on the multifamily market segment. Incentive programs, tax credits, benchmarking, and building labeling are just a few. This session will present numerous business opportunities available to Raters to increase their value on a project.

  Presenters: Elizabeth McCollum and Sophia Hartkopf, TRC Energy Services

- **HUD Rental Assistance Demonstration (RAD) Program's Energy Audit Components, Multifamily Sustainable Building Management Practices**
  The nation's public housing stock is struggling, and has significant capital repair needs. Conversion to the project-based Section 8 programs provides an opportunity to invest billions into the public housing stock. (RAD) allows PHAs to undertake this conversion for some units. Learn more about the engineering requirements for this new HUD program designed to preserve the nation's public housing.

  The RAD report has three parts: a PCA report comparing traditional and green requirements, an energy audit, and a utility consumption baseline. The RPCA Contractor must incorporate all three components into one report. A HERS rater is often called upon to perform the energy audit scope of work and must be certified by RESNET or BPI or be a CEM, PE, state equivalent certified energy auditor or professional architect.

  Partner Energy, in collaboration with its affiliate Partner Engineering & Science, has conducted numerous HUD RAD PCNA + Energy Audits. In this session we will discuss the common

challenges and best practices in completing successful RAD assessments so that you may successfully incorporate RADs into your business plan

Presenter: Tony Liou, Partner Energy