

PHRC Webinar Series | Tuesday, November 8 @ 1pm

HERS Ratings in Pennsylvania – Why, What, and How?

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Description


- Nearly a quarter of all homes built in Pennsylvania receive HERS Ratings and the number is growing each year. Many builders say they build energy efficient homes, but with the Home Energy Rating System (HERS) a builder can prove it. A skilled energy professional performs software analysis, insulation and air barrier inspections, and blower door and duct leakage testing that combine to yield a HERS Index score. This score gives homebuyers critical information about a home's energy performance that's easy to understand. At the same time, builders receive expert consulting and quality assurance services from a certified HERS Rater, and may even be eligible for utility rebates.



Learning Objectives

- Be able to describe the HERS Index and its benefits, including marketing, quantification of the costs of homeownership, and the application of a clear metric to home performance.
- Understand services provided by HERS Raters, including performance testing of building systems, in order to better implement high performance residential features.
- Be able to locate a certified HERS Rater in specific areas throughout PA.
- Understand how to utilize HERS Ratings in PA to qualify for utility rebates to help to reduce overall project costs.







What Is a HERS Rating?

An overview of the Home Energy Rating System and its benefits

Performance Systems Development
November 8, 2016



INTRODUCTION



Mike Turns
Senior Program Manager
PSD


Mike manages residential new construction and energy code programs for PSD, including new home rebate programs across Pennsylvania and the Penn Energy Codes Program.

At Performance Systems Development (PSD), we translate building science expertise into innovative energy efficiency programs, engineering services, training & powerful software tools.

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Why HERS Ratings? The Problems...

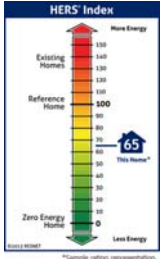
- Recognition of value**
Value of energy features not recognized in appraisal or purchase price
- Market differentiation**
Energy efficiency is invisible and homebuyers don't speak energy geek
- Quality assurance**
Third party verification improves subcontractor workmanship and reduces callbacks



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Why HERS Ratings? The Solution...

- 1 Recognition of value**
HERS Ratings create a standard method of assessment with an easy-to-understand score
- 2 Market differentiation**
Incorporate rating information into appraisals, real estate listings, and marketing messaging
- 3 Quality assurance**
Utilize a third party energy professional for oversight of subcontractors




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Webinar Overview

- 1 Introduction to the Home Energy Rating System (HERS)**
- 2 Overview of HERS Rater Certification and Services**
- 3 Marketing the HERS Index and other certifications**
- 4 Act 129 utility rebates for homebuilder**


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Where did the Home Energy Rating System come from?




- An independent nonprofit organization, founded in 1996
- A recognized national standards-making body for building energy efficiency rating and certification systems in the United States.

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What is a HERS Rating? 


- Home Energy Rating System (HERS®) is the nationally recognized system for inspecting and calculating a home’s energy performance.
- When doing a comprehensive HERS energy rating, a certified RESNET HERS Rater will conduct a series of diagnostic tests using specialized equipment, such as: a blower door test, duct leakage test, and infrared cameras
 - The amount and location of air leaks in the building envelope
 - The amount of leakage from HVAC distribution ducts
 - The effectiveness of insulation inside walls and ceilings

www.hersindex.com 17

RESNET 

- Other variables that are taken into account include:
 - Floors over unconditioned spaces (like garages or basements)
 - Attics, foundations and crawlspaces
 - Windows and doors, vents and ductwork
 - Water heating system and thermostats

www.hersindex.com 18

What is a HERS Rating? 

The comprehensive HERS rating provides:

- A computerized simulation analysis utilizing RESNET Accredited Rating Software to calculate a rating **score on the HERS Index**.
- The report will also contain a **cost/benefit analysis** for the recommended improvements and expected return on investment.

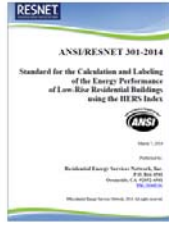
www.hersindex.com 19

What is a HERS Rating?



ANSI/RESNET 301-2014:

Standard for the Calculation and Labeling of the Energy Performance of Low-Rise Residential Buildings using the HERS Index



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What is a HERS Rating? (Video)



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Certified Home Energy Raters



Rater Certification Process:

- Two-week long training
- National Rater Exam
- Mentoring for first 5 Ratings
- "Providership" QA on a percentage of all Ratings
- Continuing education



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Builder/Rater Relationship

Builder concerns:

- Cost of construction
- Liability
- Code compliance
- Customer satisfaction
- Increasing sales

Rater Services:

- Cost effectiveness consulting
- QA of subcontractors
- Code compliance documentation
- Reduced comfort complaints
- Access to marketing tools

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HERS Rater – Code compliance services

2006	2009	2012	2015
<ul style="list-style-type: none"> Air sealing list UA Tradeoff Equipment sizing/select Simulated Performance Alternative 	<ul style="list-style-type: none"> Above-code programs UA Tradeoff Equipment sizing/select Blower door test (optional) Detailed air sealing and insulation inspection criteria Duct testing Simulated Performance Alternative 	<ul style="list-style-type: none"> Above-code programs UA Tradeoff Equipment sizing/select Blower door test (mandatory) Detailed air sealing and insulation inspection criteria Duct testing Simulated Performance Alternative 	<ul style="list-style-type: none"> Above-code programs UA Tradeoff Equipment sizing/select Blower door test (mandatory) Detailed air sealing and insulation inspection criteria Duct testing Simulated Performance Alternative Energy Rating Index Path

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Energy Rating Index – 2015 IECC compliance path


Section R406: Energy Rating Index Compliance Alternative

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Marketing HERS

And other home certifications



HERS Raters and Access to Marketing Tools



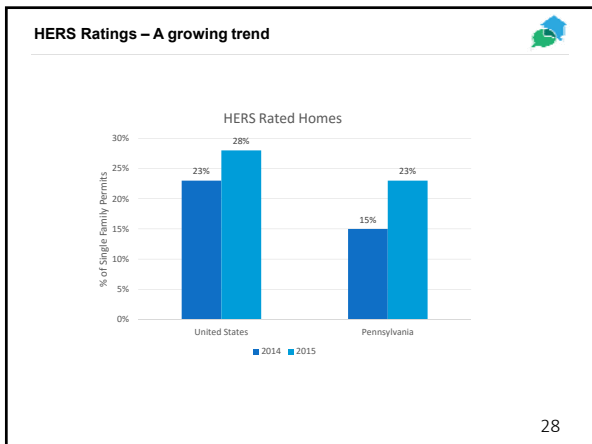
Utility Rebate Programs

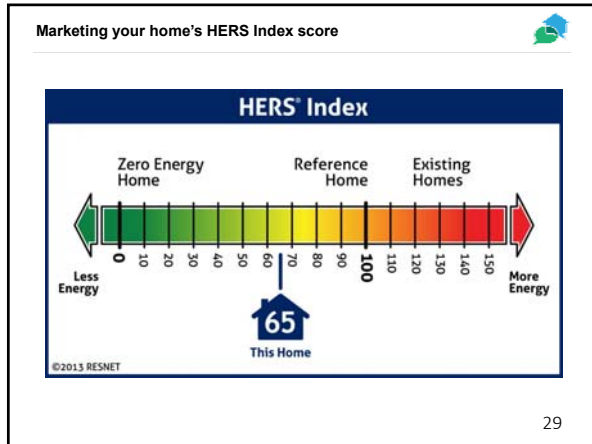
Building science consulting/comfort/diagnostics

Code Services

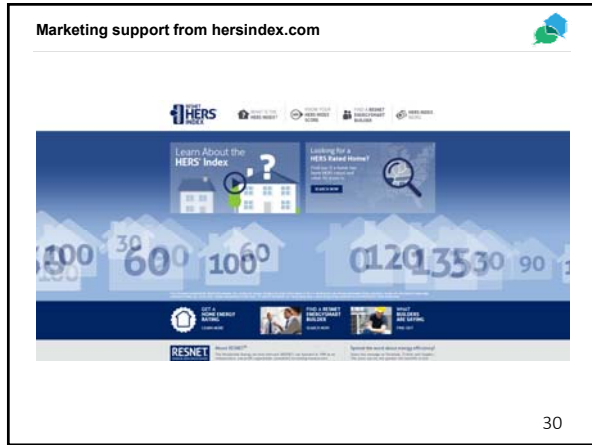
Above-Code Services



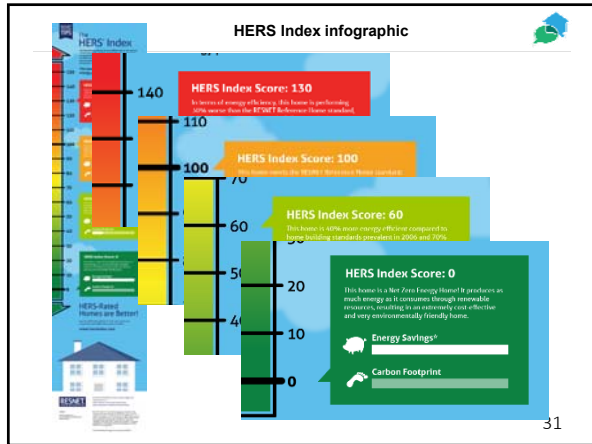




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EnergySmart Builder recognition

Find a RESNET EnergySmart Builder in Your Area

RESNET Professional Builders are committed to finding all of their homes 10% more energy efficient. They are also the most widely used for energy smart home energy professionals.

Regional and State EnergySmart Builders

- Liberty Homes Custom Builders**
 - Presidents
 - Liberty Homes
- NV Homes**
 - President, President/Regional, Regional and Field Support
 - NV Homes
- SBA Homes**
 - President/Field Support
 - SBA Homes

Making energy efficiency affordable

There are a number of factors involved. But you can take advantage of it help you make your home more energy efficient. There are many ways to make energy efficient. Home energy audits are a good first step to find out what you can do to make your home more energy efficient.

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Home Energy Rating Certificate

Property: HERS
 Rating Type: Certified
 Rating Date: 10/05/2015
 City, PA ZIP: 15106
 Registry ID: 64400910
 Certified Energy Rate: HL Water
 Rating Number: 15106010

HERS Index: 61

General Information

Conditioned Area	3333 sq. ft.	House Type	Single-Family Detached
Conditioned Volume	35485 cubic ft.	Foundation	More than one type
Bathrooms	4		

Mechanical Systems Features

Heating	Fuel-fired air distribution, natural gas, HL-0 AFUE
Heating	Fuel-fired air distribution, natural gas, HL-0 AFUE
Cooling	Air conditioner, ELECTRIC, 13.0 SEER
Duct Leakage to Outside	10.00 CFM25
Ventilation System	None
Programmable Thermostat	Heat/Cool, Cool/Heat

Building Shell Features

Ceiling R-Val	10.0	SI6	R-0.0 Edge, R-0.0 Under
Roofed Attic	10.0	Exposed Floor	R-0.0
Insulated Ceiling	R-38.0	Window Type	1" Inset, 0.280, SHGC: 0.318
Aluminum Sash Windows	R-24.0	Infiltration Rate	10.08 Cfm, 1.04 CH20
Foundation Walls	R-10.0	Method	Blow About Seal

Lights and Appliance Features

Receptacle Lighting	80.00	Range/Oven Fuel	Electric
Receptacle Lighting	100.00	Clothes Dryer Fuel	Electric
Refrigerator (Btu/hy)	745	Clothes Dryer Eff.	3.01
Dishwasher (Btu/hy)	224	Ceiling Fan (Btu/hy)	0.00

Estimated Annual Energy Cost

Use	kBtu/yr	Cost	Percent
Heating	50.0	\$1412	42%
Cooling	15.7	\$376	8%
Hot Water	4.9	\$122	3%
Lighting/Appliances	27.5	\$1409	42%
Refrigerators	-0.0	\$-0	0%
Service Charges	5.0	\$0	0%
Total	98.0	\$3308	100%

Criteria

This home meets or exceeds the minimum criteria for the following:

TITLE
 Company
 Address
 City, State, Zip
 Phone #
 Fax #


RESNET - Residential Energy Analysis and Rating Software v16.6.4
 This information does not constitute any warranty of energy cost or savings. © 1995-2016 HomeStar, Boulder, Colorado.
 The Home Energy Rating Standard (HERS) for this home is available from the rating provider.

ENERGY STAR. The simple choice for energy efficiency.


Selling the Value of ENERGY STAR® Certified Homes

EPA

ENERGY STAR. The simple choice for energy efficiency.




Third Party Verification




EPA 36

ENERGY STAR. The simple choice for energy efficiency.




Peace of Mind

An integrated approach to design combined with tried-and-true best building practices adds up to a home with **better durability, better comfort and reduced utility and maintenance costs.**



Enduring Quality


Purchasing a new home is a big investment, so it's important to know that it's built to last. Features include:



1. Complete Thermal Enclosure System
2. High-efficiency Heating, Ventilation, and Cooling System
3. Comprehensive Water Management System
4. Energy-efficient Lighting and Appliances


EPA

ENERGY STAR. The simple choice for energy efficiency.



Wall-to-Wall Comfort


Features include **efficient delivery of comfort, a constant supply of fresh, filtered air, and consistent temperatures felt across every room,** making the entire home comfortable year-round.



Proven Value

ENERGY STAR certified new homes offer better energy efficiency and performance compared to other homes, making them a better value.

THE SAVINGS



AN ENERGY STAR CERTIFIED NEW HOME DELIVERS ENERGY SAVINGS UP TO **30%** compared to typical new homes.

EPA

Zero Energy Ready Home Certification

The Future of Housing—Today

Only a select group of the top builders in the country meet the requirements set by U.S. Department of Energy guidelines.

Lives better. **Works better.** **Lasts better.**

HEALTHY ENVIRONMENT
ZERO Energy Ready Homes are built to protect the health of the people who live in them. They are designed to reduce indoor air pollution, control moisture, and prevent mold.

ADVANCED TECHNOLOGY
ZERO Energy Ready Homes use the latest in energy-efficient technologies, including high-performance windows, doors, and roofs, as well as energy-efficient appliances and lighting.

QUALITY BUILD
ZERO Energy Ready Homes are built to last. They are designed to be durable and long-lasting, and they are built to meet the highest standards of quality.

COMFORT PLUS
ZERO Energy Ready Homes are designed to provide a comfortable living environment. They are built to be quiet and to provide a consistent temperature throughout the home.

ULTRA EFFICIENT
ZERO Energy Ready Homes are designed to be ultra-efficient. They use less energy than most homes, which means lower utility bills and a smaller carbon footprint.

DURABILITY
ZERO Energy Ready Homes are designed to be durable. They are built to withstand the elements and to last for many years.

LEARN MORE AT: buildings.energystar.gov/zero

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Passive House Certification

PHIUS
Passive House Institute US

Certified Projects Database

Berlin Passive House | No. 108 | Project/Phase | Richard Probst

No.	108	Project	Berlin Passive House	State	Pennsylvania
Lead PHS	Project/Phase	Builder	Client	Location	Berlin, PA

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Appraisal Institute's Green Addendum

ENERGY RATING

ENERGY STAR Home
 HPxES (Home Performance with ENERGY STAR)
 Other (Describe):


Indoor Air PLUS Package
 Energy Recovery Ventilator Unit
 Certification Attached

HERS INFORMATION

Rating:	Date Rated:	Monthly Energy Savings on Rating \$

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Act 129
Rebates for builders of new homes




Pennsylvania Act 129 of 2008

Energy Efficiency and Conservation (EE&C) Programs - Act 129 directed all electric distribution companies with at least 100,000 customers to develop and file an energy efficiency and conservation plans.

Programs include rebates for appliances, lighting, HVAC & DHW equipment, energy audits, new home construction, etc.

Builder rebates are available in the following service territories:

- Met-Ed
- Penelec
- Penn Power
- West Penn Power
- PPL
- PECO



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Residential New Construction Programs: Eligible Housing Types

All units must have individual residential electric meters and must be in buildings that are:

- 3 stories or less
- or*
- 4 or 5 stories with:
- separate heating, cooling and DHW systems for each unit
- and*
- dwelling units that occupy at least 80% of the buildings occupiable square footage

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Met-Ed
Penelec
Penn Power
West Penn Power
Energy Services

The Pennsylvania Energy Efficient New Homes Program

Your First Source for **Energy Savings**

	Eligibility Criteria	Incentive ¹
Tier 1	HERS Rating + 15% savings over code	30 ¢ per kWh
Tier 2	HERS Rating + 15% savings over code + ENERGY STAR® Home	35 ¢ per kWh

Low-income: Add 3¢ per kWh for low-income dwellings
 Manufactured homes: Must be ENERGY STAR, 35 ¢ per kWh to plant

¹Incentive caps: Single-family homes: \$1875. Townhouse/Duplex: \$1125. Low-rise multifamily: \$600.

EnergySavePA-NewHomes.com

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PPL New Homes Program

	Eligibility	Incentive
Tier 1	HERS Rating + 15% above code	30 cents/kWh
Tier 2	HERS Rating + 15% above code + ENERGY STAR® Home	35 cents/kWh

Maximum incentive = \$2,500


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PECO
All The Power Company

PECO New Home Rebates

TIER LEVELS	ELIGIBILITY REQUIREMENTS	INCENTIVE TO BUILDER	INCENTIVE CAP
Tier 1: Code Plus	HERS Rating+ 30% savings over code	25¢ per kWh	\$750
Tier 2: ENERGY STAR 3.0	HERS Rating+ ENERGY STAR certification	30¢ per kWh	\$1,750

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Free introduction to Rater services 




Certified Rater provides one free:

- Plan review/software analysis
- Air barrier and insulation inspection
- Blower door test
- Duct leakage test

Contact a participating Rater at:
<http://pennenergycodes.com/energyexperts>

Availability is limited to the following area: 

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Find a certified HERS Rater now 

FirstEnergy <http://energysavepa-newhomes.com/raters/all>

PPL <http://ppl electricnewhomes.com/builders/find-participating-raters/>

PECO <http://peconewhomes.com/builders/find-participating-raters/>

Penn Energy Codes <http://pennenergycodes.com/energyexperts>

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Thank You

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 mturns@psdconsulting.com

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