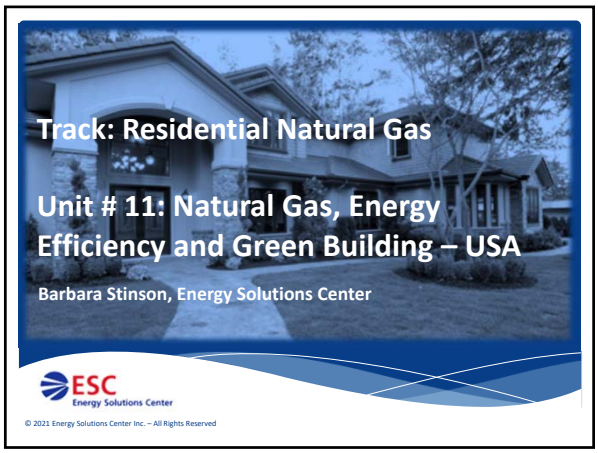

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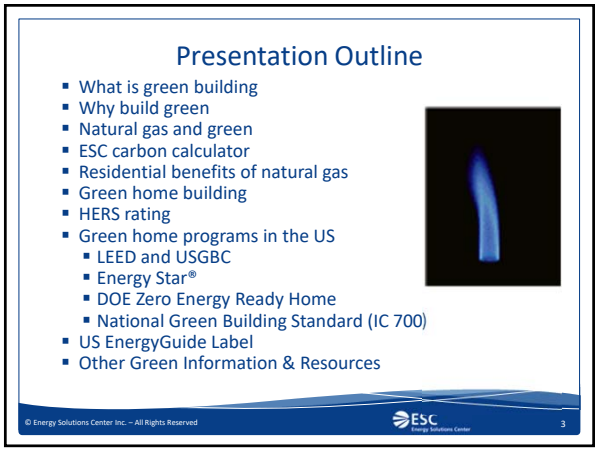

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Why a Green Home?

- Market differentiation and long-term increased resale value
- "Green loans" for purchasing energy-efficient homes or making energy-saving upgrades
- Savings on monthly utility bills
- Healthier place to live
- Sustainability
- Potential rebate and incentive programs.
- Potential state and/or local tax credits

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How We Build Affects our "Green"

- Typical home causes twice the pollution of typical car
- Residential sector accounts for 20% of CO_2 emissions from fossil fuel combustion
- Construction of a 2,000 ft^2 home generates 4 tons of waste

Source: ENERGY STAR, EPA, NAHB

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Natural Gas Blue can Make You "Green"

- Environmental benefits
- Homeowner Benefits
- Promotes green home-building standards throughout the world
- Efficient natural gas products are important to residential green building
- Green is growing and the growth is expected to continue

7

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The Environmental Benefits of Natural Gas

- Cleanest burning fossil fuel
- Produces no sulfur dioxide or particulate emissions
- Much lower levels of carbon dioxide and nitrogen oxides than oil or coal
- Delivered to the customer at about 90% efficiency, compared to electricity which is about 30%
- Unlike oil, coal and nuclear, the natural gas process produces no solid waste

Source: American Gas Association

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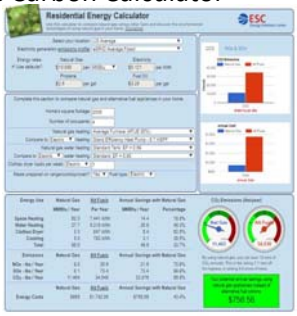
ESC's On-Line Carbon Calculator

- Simple User Inputs
  - Home Size
  - Family Size
  - Loads of laundry per week
  - Cook or not cook
- Various heating and water heating appliances and efficiencies can be selected
- Example to follow:
  - 2000 foot^2 home, average heater efficiencies
  - Family of 3, average water heater efficiencies
  - 7 loads of laundry dried per week



https://esc.energydepot.com/user-information/home

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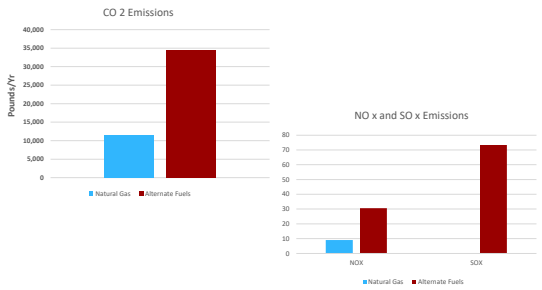
ESC's Carbon Calculator



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The Residential Benefits of Natural Gas

- **Cost Effective** – operate at up to half the cost of non-gas appliances
- **Reliable** – delivered via underground pipes so it is there when you need it
- **Comfortable** – natural gas heat is delivered at temperatures between 110°F and 120°F (43.3°C and 48.8°C)
- **Safe** – excellent safety record due to the physical characteristics of gas
- **Abundant** - 99% of natural gas is produced in North America, with enough supplies to last 100+ years

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Green Home Building

- Green homes comprised 23% of the overall residential construction market in 2013, up from 2% in 2005.
- The residential green construction market is expected to grow from $55 million in 2015 to over $100 million in 2018.
- Additional costs associated with green building will be recouped through lower energy bills over the lifespan of the green home.

Source: US Green Building Council

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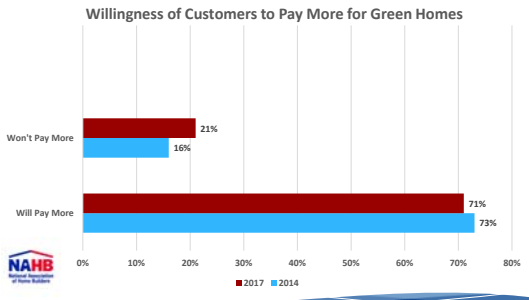
What Builders Say About Green Building



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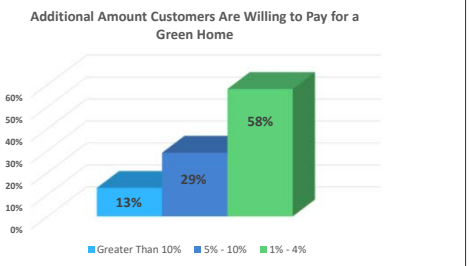
What Builders Say About Green Building



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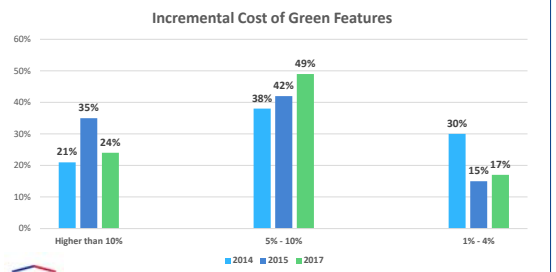
What Builders Say About Green Building



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Residential Green Building Practices

- Homes are designed and constructed to use energy, building materials and water more efficiently
- Designed to reduce impact on the physical environment
- Promote a healthy indoor environment.
- Use an integrated design approach that sees the house as a system.

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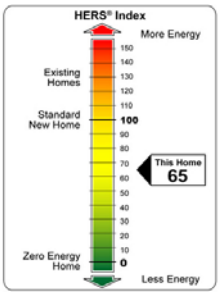
What is The HERS Index?



- RESNET (Residential Energy Service Network)
  - Founded in 1995
- Created HERS index to rate homes for Mortgage Industry
- Based off a home built to 2015 IECC standards
- Lower is better

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Background on HERS Index

- Scoring system established by RESNET.
- Each 1-point decrease in the HERS Index corresponds to a 1% reduction in energy consumption
- Home Energy Rater uses energy-efficiency software to perform an energy analysis of the home's design. This analysis yields a projected, pre-construction HERS Index

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Green Home Programs in the United States

- U.S. Green Building Council: Leadership in Energy and Environmental Design (LEED™)
- ENERGY STAR®
- DOE Zero Energy Ready Home
- International Code Council (ICC) National Green Building Standard

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LEED™ and USGBC

- LEED is administered by the U.S. Green Building Council (USGBC), a non-profit organization committed to a prosperous and sustainable future for our nation through cost-efficient and energy-saving green buildings
- USGBC is comprised of more than 12,000 member organizations as well as more than 190,000 LEED professionals from across the building and utility industries

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Facts About LEED for New Home Building

- Started as a pilot in 2005, LEED's national home rating system was launched in December 2007
- The rating system clearly defines and establishes benchmarks for green home building
- Over 370,105 new homes have been LEED certified around the world as of October 2017

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According to LEED for Homes…

- The certification process is affordable, and costs can range from 2% to 5% of the original non-LEED budget.
- There are 3 types of costs:
  - Hard Costs: the costs of materials and labor
  - Certification Fees: registration and certification fees due to the USGBC
  - Verification Fees: can be adjusted based on size of the home

U.S. GREEN BUILDING COUNCIL
THE GREEN HOME GUIDE

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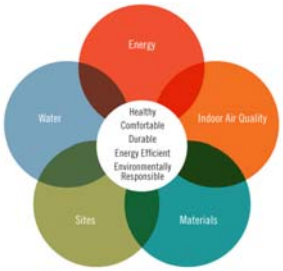
How Does LEED Define a Green Home



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LEED Certification Points & Levels

- For new homes, LEED certification is based on a 110-point scale
- Levels:

40-49 Points Certified | 50-59 Points Silver | 60-79 Points Gold | 80 Points & above Platinum

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LEED Homes are Rated in 9 Categories

1. Innovation
2. Location and transportation
3. Sustainable sites
4. Water efficiency
5. Energy and atmosphere
6. Materials and resources
7. Indoor environmental quality
8. Awareness and education
9. Regional Priority

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LEED Homes Measures

- Prerequisites
- Credits
- Points

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LEED Rating Information

- 18 prerequisites in 9 categories
- Credit Interpretation Requests (CIR's) available to projects that need clarification or special consideration
- Requires third-party verification as part of certification

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Mandatory and Optional LEED Points

Credit Category	No. of Prerequisite (Mandatory) Measures	Maximum No. of Points Available
Innovation	1	6
Location & Transportation	1	15
Sustainable Sites	2	7
Water Efficiency	1	12
Energy & Atmosphere	4	38
Materials & Resources	2	10
Indoor Environmental Quality	7	16
Regional Priority	0	4
Total	**18**	**108***

*An additional 2 points are awarded for integrative process bringing the total to 110

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Minimum Energy Requirements LEED v4

1. Complete all mandatory measures of ENERGY STAR for Homes version 3
2. If installed, at least one of the following appliances must be ENERGY STAR qualified (or performance equivalent for projects outside the U.S.) in each dwelling unit:
   - refrigerator;
   - dishwasher; or
   - clothes washer
3. All duct runs must be fully ducted (i.e., building cavities may not be used as ducts).

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LEED Rating and Certifying

- LEED Providers are local and regional organizations chosen by USGBC
- LEED Homes are rated by Homes Providers who are under contract with USGBC to:
  - Recruit and register projects
  - Provide oversight of Green Raters
  - Certify LEED homes
  - Assure quality for the certifications
  - Coordinate USGBC and local USGBC chapters
- A Green Rater works as part of the LEED for Homes Provider Team to perform field inspections and performance testing
- An updated list of providers can be found at **www.usgbc.org/leed/homes**

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Steps for Homes Certification

1. Register
2. Verify
3. Review
4. Certify

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Verification Team and Their Roles

- LEED for Homes Provider Organization

A provider can be found at: https://www.usgbc.org/organizations/members/homes-providers

- LEED for Homes Green Rater

A green rater can be found at: https://www.usgbc.org/people/green-raters

- Energy Rater

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Five Steps to Participate in LEED

1. Contact a LEED for Homes Provider and join the program
2. Identify the Project Team and complete the following steps:
   a) Performance testing of a typical example of the builder's home design
   b) Completion of preliminary project checklist
   c) A preliminary estimate of LEED score and certification level
3. Build the home
4. Certify the home – the documentation includes:
   a) Completed and signed checklist
   b) Completed and signed accountability forms
   c) Completed and signed Durability Risk Evaluation Form and durability inspection checklist
5. Market and sell the home

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LEED Fees

- Registration fees
- Certification fees
- Other fees

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Costs Associated with LEED-Single Family Housing

BUILDING DESIGN AND CONSTRUCTION FEES	SILVER, GOLD AND PLATINUM LEVEL MEMBERS	ORGANIZATIONAL OR NON-MEMBERS
REGISTRATION	$1,200	$1,500
PRECERTIFICATION (CORE & SHELL ONLY)		
Flat fee (per building)	$4,000	$5,000
Expedited review (reduce from 20-25 business days to 10-12, available based on GBCI review capacity)	$5,000	

NOTE:
Registration and certification fees are subject to change and are calculated on the dates of registration and certification submission.
Green Rater verification costs are additive.

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ENERGY STAR®

ENERGY STAR® was established in 1992 as a joint, voluntary program of the U.S. Environmental Protection Agency and the U.S. Department of Energy "to help businesses and individuals save money and protect our climate through superior energy efficiency"

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Facts about ENERGY STAR Qualified Homes

- Energy Star® certified homes are at least 10% more energy efficient than homes built to code & achieve a 20% improvement on average
- The average annual savings from an Energy Star ® home is $250
- Each Energy Star® certified home reduces greenhouse gas (GHG) emissions by 3,287 lbs/yr compared to a typical home
- This is the equivalent GHG that would be absorbed by planting 39 trees
- ENERGY STAR® qualified homes do not include levels like other programs

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22 Years of ENERGY STAR® Homes

Here are the accomplishments so far!

- 22 years of building Energy Star ® homes
- 1,700,000 homes have received the ENERGY STAR® label to date
- More than 130,000 ENERGY STAR® for Homes Partners

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Primary Features of an ENERGY STAR® Home

- Complete heating and cooling system
- Complete thermal enclosure
- Complete water protection system
- Energy-efficient lighting and appliances
- Independent inspections and tests

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Program Requirements

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Steps to Certification

1. Builder fills out EPA Partnership Agreement.
2. Builder works with a Home Energy Rater (verification organization) that evaluates home plans. Homes must meet requirements in several key areas

   Builder has flexibility in some areas
3. Builder constructs home and Rater verifies features and performance – Performance testing is on-going during construction
4. Rater qualifies the home as Energy Star® and issues the Energy Star® label

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Key Requirements on HVAC Checklists

- Whole-building mechanical ventilation
- Heating & cooling system design and efficiency standards
- Duct installation, leakage, insulation
- Furnaces, boilers, water heaters in home's pressure boundary mechanically drafted or direct-vented
  - Some exceptions for Climate Zones 1-3
- Exhaust flow requirements for fireplaces not mechanically drafted or direct-vented

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Indoor airPLUS – Additional Design and Construction Features

Focuses solely on indoor air quality, builds on the Energy Star qualifications.

- Moisture control
- HVAC
- Combustion venting systems
- Radon resistant construction
- Low-emitting building materials

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Key HVAC & Combustion Requirements (Indoor AirPLUS)

- In "Warm-Humid" climates as defined by 2015 IECC Section 301 (i.e., Climate Zone 1 and portions of Zones 2 and 3A below the white line), equipment shall be installed with sufficient latent capacity to maintain indoor relative humidity (RH) at or below 60 percent
- Do not use building cavities as part of the forced air supply or return systems
- Do not locate air-handling equipment or ductwork in garages

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Key HVAC & Combustion Requirements (Indoor AirPLUS)

- Do not install any unvented combustion space-heating or decorative appliances in conditioned space
- Mechanically draft or direct vent all gas-and oil- fired furnaces, boilers and water heaters located in conditioned
- Ensure that all fireplaces and other fuel-burning and space-heating appliances located in conditioned spaces are vented to the outdoors and supplied with adequate combustion and ventilation air according to the manufacturers' installation instructions

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Meeting National Requirements

- Flexibility to select a custom combination of measures for each home that is equivalent in performance to the minimum requirements of the ENERGY STAR Reference Design Home
- Uses a RESNET-accredited Home Energy Rating software program to determine the ENERGY STAR HERS Index Target

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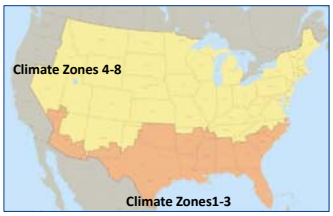
Reference Design: HVAC Requirements Vary by Hot vs. Mixed/Cold Climate Zones



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Minimum ENERGY STAR® Reference Design

Hot Climates (2009 IECC Zones 1,2,3) [12]	**Mixed and Cold Climates** (2009 IECC Zones 4,5,6,7,8) [12]
Cooling Equipment (Where Provided)	
• Cooling equipment modeled at the applicable efficiency levels below:	
• 15 SEER / 12 EER AC, • Heat pump (See Heating Equipment)	• 13 SEER AC, • Heat pump (See Heating Equipment)
Heating Equipment	
• Heating equipment modeled at the applicable efficiency levels below, dependent on fuel and system type:	

• Gas furnace, efficiency as follows:
  • *CZ 1 & 2:* 80 AFUE,
  • *CZ 3:* 90 AFUE, ENERGY STAR certified,
• 80 AFUE oil furnace,
• 80 AFUE boiler,
• 8.2 HSPF / 15 SEER / 12 EER air-source heat pump with electric or dual-fuel backup
	• 95 AFUE ENERGY STAR gas furnace,
	• 85 AFUE ENERGY STAR oil furnace,
	• 90 AFUE ENERGY STAR gas boiler,
	• 86 AFUE ENERGY STAR oil boiler,
	• Heat pump, with efficiency as follows:
	• *CZ 4:* 8.5 HSPF / 15 SEER / 12 EER air-source w/ electric or dual-fuel backup,
	• *CZ 5:* 9.25 HSPF / 15 SEER / 12 EER air-source w/ electric or dual-fuel backup,
	• *CZ 6:* 9.5 HSPF / 15 SEER / 12 EER air-source w/ electric or dual-fuel backup,
	• CZ 7-8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup

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Minimum ENERGY STAR® Reference Design

Water Heater						
• DHW equipment modeled with the following efficiency levels as applicable:						
Gas:	30 Gal = 0.63 EF	40 Gal = 0.61 EF	50 Gal = 0.59 EF	60 Gal = 0.57 EF	70 Gal = 0.55 EF	80 Gal = 0.53 EF
Electric:	30 Gal = 0.94 EF	40 Gal = 0.93 EF	50 Gal = 0.92 EF	60 Gal = 0.91 EF	70 Gal = 0.90 EF	80 Gal = 0.89 EF
Oil:	30 Gal = 0.55 EF	40 Gal = 0.53 EF	50 Gal = 0.51 EF	60 Gal = 0.49 EF	70 Gal = 0.47 EF	80 Gal = 0.45 EF

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Unique HERS Index for Each Home

- RESNET accredited software program determines unique ENERGY STAR HERS Index Target threshold for each individual home
- Index Target uses ENERGY STAR Reference Design specifications
- The software* accounts for state energy codes, if they exceed ENERGY STAR requirements
- Renewable energy systems cannot be used to meet base value of Reference Design HERS index

*ENERGY STAR provides guidance for manual calculations

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DOE Zero Energy Ready Home

- A high performance home which is so energy efficient, that a renewable energy system can offset all or most of its annual energy consumption
- Leading edge green building – at least 40% to 50% more energy efficient than typical new home
- Verified by a qualified third-party
- Low HERS score (Performance Path homes) – typically in 50s, depending on home size & region

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DOE Zero Energy Ready Home Requirements

- Comply with Energy Star for Homes Program Requirements and Inspection Checklists for:
  - Thermal Enclosure
  - HVAC Quality Installation (Contractor and HERS Rater)*
  - Water Management
  - Feature energy efficient appliances and fixtures that are Energy Star qualified
  - Use high performance windows that meet Energy Star v5.0 and v6.0 specs (depends on climate zone)

* There are exceptions

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DOE Zero Energy Ready Home Requirements (continued)

- Meet 2012 International Energy Conservation Code levels for insulation
- Install ducts in conditioned space or in an optimized location as defined in the program specs
- Conserve water and energy through an efficient hot water distribution system that provides rapid hot water to the homeowner

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DOE Zero Energy Ready Home Requirements (continued)

- Provide comprehensive indoor air quality through full certification in EPA's Indoor airPlus Program
- Accomplish savings on the cost of future solar PV installations by following the PV-ready checklist for climates with significant solar insolation. This checklist references EPA's solar electric guide.

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Qualifying as a Zero Energy Ready Home

Builders can follow two different paths.

1. **The Prescriptive Path:** Provides a single set of measures – modeling is not required but no tradeoffs are allowed, HERS Index not required
2. **The Performance Path:** All mandatory requirements must be met but this path provides flexibility to select a custom combination of measures equivalent in performance to DOE Zero Energy Ready Home HERS Target Home

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HVAC Minimum Requirements

- Performance Path homes must meet these requirements.
- Prescriptive Path must demonstrate equivalent performance.

HVAC Equipment	Hot Climate 2012 IECC Zones 1, 2	Mixed Climate 2012 IECC Zones 3,4 except Marine	Cold Climate 2012 IECC Zones 4 Marine, 5-7
AFUE	80%	90%	94%
SEER	18	15	13
HSPF	8.2	9	10
ASHRAE 62.2 whole-house mechanical ventilation	1.4 cfm/Watt; No heat exchange	1.4 cfm/Watt; No heat exchange	1.2 cfm/Watt; Heat exchange with 60% SRE

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Water Heating

- ENERGY STAR levels for the system Energy Factor, as follows:
- Gas/propane systems of ≤ 55 gallons, EF = 0.67
- Gas/propane systems of > 55 gallons, EF = 0.77
- Electric systems, EF = 2.0
- For heating oil water heaters use EF = 0.60

Hot water delivery systems must meet the requirements listed under EPA WaterSense Single-Family New Home Specification

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Efficient Hot Water Delivery

- To minimize wasted water while waiting for hot water, hot water systems store no more than 0.5 gallons of hot water in any piping/manifold between the source of hot water and the furthest fixture
- Recirculation systems that are activated based solely on a timer and/or temperature sensor do not meet this requirement

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Prescriptive Path
Zero Energy Ready Home

- Single set of measures.
- Based on DOE Zero Energy Ready Home Target Home
- Conditioned floor area (CFA) of home to be built must be within CFA of Benchmark Home size – if not, must use Performance Path
- Verifier confirms that all requirements met
- Verification submitted by email to DOE

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Performance Path
Zero Energy Ready Home

- Builder/home owner can select a custom combination of measures
- The HERS Index of the DOE Zero Energy Ready Home Target Home is determined
- A size modification factor is next calculated
- The HERS Index of the DOE Zero Energy Ready Home Target Home is calculated next
- Complete HERS software calculations for preferred set of energy measures and verify resulting HERS Index Score falls at or below DOE Zero Energy Ready Home Target Home HERS Index Score
- Construct the home and have it verified.

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National Green Building Standard™
(ICC 700)

- In 2007 the NAHB and International Code Council partnered to establish standard definition of green building
- Only residential green rating to receive approval of American National Standards Institute (ANSI)
- Provides a blueprint for builders to follow
- Appropriate for new and renovated SFH's and MF buildings
- Last revision in 2015; uses 2015 IECC
- 142,278 NGBS certified homes to date

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Overview of Certification Process

Step 1: Score the building using the downloadable scoring spreadsheet.

Step 2: Hire an accredited verifier who will register the project and obtain a unique Project ID.

Step 3: Send the design information to the verifier along with scoring spreadsheet. Schedule a rough inspection before the drywall is installed.

Step 4: Home Innovation Research Labs will send a Builder's Agreement to new builders.

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Overview of Certification Process

Step 5: Sign the completed rough Verification Report, which the verifier will send to Home Innovation Labs for review.

Step 6: Schedule a final inspection with your verifier, and sign the final Verification Report which the verifier will send to Home Innovation Labs for review.

Step 7: Home Innovation Labs will review the report and issue a "Home Innovation NGBS Green Certified" certificate, provided all documentation is complete.

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NGBS Certification is Available for:

1. New single-family structures
2. New multifamily structures
3. Remodeling
4. Land development

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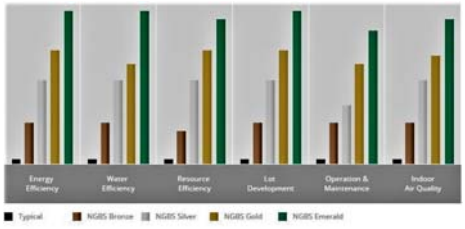
National Green Building Standard™

- Four performance levels: Bronze, Silver, Gold and Emerald



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Threshold Point Ratings – NGBS 2015

Category	Bronze Level	Silver Level	Gold Level	Emerald Level
Lot design, preparation and development	50	64	93	121
Resource efficiency	43	59	89	119
Energy efficiency	30	45	60	70
Water Efficiency	25	39	67	92
Indoor environmental quality	25	42	69	97
Operation, maintenance, building owner education	8	10	11	12
Additional points from any category	50	75	100	100
Total	**231**	**334**	**489**	**611**

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Two Paths for Energy Efficiency – NGBS

1. **The Prescriptive Path:** More extensive; many requirements are climate-zone specific. Analysis of building envelope may be conducted through RES*check* or other software, or third-party verification. Points available vary by type of HVAC, home location, other factors.
2. **The Performance Path:** Minimum requirement is that performance must equal the IECC. Home can earn an additional 30, 60, 80 or 100 points in this category by exceeding energy cost performance of IECC baseline by 15, 30, 40 or 50% respectively. Performance demonstrated by approved software. Achievement of Emerald Level must be through Performance Path.
3. **ENERGY STAR qualified home** can earn Bronze Level in Energy Efficiency category.

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Key Energy Efficiency HVAC Items that Are Mandatory - NGBS

All homes must meet following in HVAC:

- Heating and cooling equipment sized using ACCA Manual J
- Radiant or hydronic must be designed using industry-approved guidelines or standards (ACCA Manual J, AHRI I=B=R, etc.) or an accredited professional following manufacturer requirements
- Ducts sealed per reference standards (UL181A or UL181B); no building cavities serving as supply ducts

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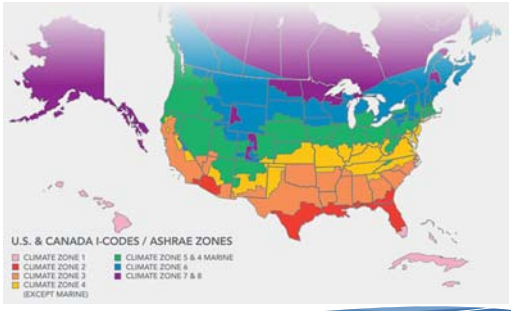
Climate Zones of the US and Canada



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Gas Heaters – Points by Climate Zone

	Climate Zone							
	1	2	3	4	5	6	7	8
	POINTS							
≥ 90% AFUE	0	2	3	6	6	9	10	12
≥ 92% AFUE	0	2	4	7	8	10	12	14
≥ 94% AFUE	0	3	4	9	9	12	14	16
≥ 96% AFUE	1	3	5	10	10	14	16	19
≥ 98% AFUE	1	3	6	11	12	16	18	21

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Gas Boilers – Points by Climate Zone

	Climate Zone							
	1	2	3	4	5	6	7	8
	POINTS							
≥ 85% AFUE	0	1	1	2	3	4	4	4
≥ 90% AFUE	0	1	2	4	6	7	8	6
≥ 94% AFUE	0	2	3	5	8	9	10	8
≥ 96% AFUE	0	2	4	6	9	11	12	10

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Natural Gas Water Heater Points

	Climate Zone							
	1	2	3	4	5	6	7	8
	POINTS							
0.67 EF to <.8 EF	3	3	2	2	2	2	2	1
≥ 0.80 EF	4	4	3	3	3	3	3	2

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Natural Gas Water Heater Points

Storage with input rate greater than 75,000 BTU/hr or instantaneous input rate greater than 200,000 BTU/hr

	Climate Zone							
Thermal Efficiency	1	2	3	4	5	6	7	8
	POINTS							
≥ .90	6	6	5	3	3	3	3	2
≥ .95	7	7	5	4	4	4	4	2

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Scoring Tools for NGBS Green Certification

- Scoring tools are available for new construction, remodeling and land development projects through the program's secretariat, The Home Innovation Research Labs
- The Home Innovation Research Labs also provides installations specifications, including quantity of product and method of installation; as well as pre-approval of products that are eligible for certification points
- Allows for the verification and certification process to be streamlined for builders, architects and developers

Home Innovation NGBS GREEN CERTIFIED

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Primary Attributes of Certification Process

- Healthy Homes
  - Improved indoor air quality
  - Limiting pollutants in the home
  - Preventing moisture problems
- Lower Operating Costs
  - Reduced utility costs
  - Lower maintenance costs
  - Ensuring optimum performance
- Sustainable Lifestyle
  - Promoting walkability
  - Reduced maintenance
  - Preserving natural resources

Home Innovation NGBS GREEN VERIFIER

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NGBS Certification Fees

- Fees set by The Home Innovation Research Labs
- Cost is $200 per single-family structure
- Volume discounts are available
- Verification is an additional fee. The Home Innovation Research Labs provide a list of verifiers by state

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Additional Information

- U.S. EnergyGuide Label
  - Where are they found
  - What do they tell us
  - How do you read them

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United States EnergyGuide Label

- The Federal Trade Commission's Appliance Labeling Rule helps consumers comparison shop for energy-efficient appliances
- Manufacturers of most major home appliances must attach FTC's yellow EnergyGuide label
- Label **estimates** how much energy the appliance uses and displays an estimate of annual operating cost (based on national average energy costs) – this is not a guarantee of operating costs
- National averages energy costs are updated every 5 years

CONTINUED

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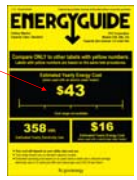
United States EnergyGuide Label

- EnergyGuide label also shows the range of operating costs for models with similar features
- Some appliances are being rated with updated energy efficiency tests and as of January 2014, have new EnergyGuide labels with bright yellow numbers
- When comparing appliances, be sure to compare all black number guides or all yellow number guides



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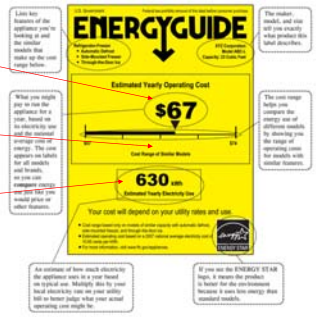
How to Read the U.S. EnergyGuide Label

1) Estimated yearly operating cost based on the national average cost of gas or electricity.
2) Cost range for appliances with similar features
3) Estimated annual energy consumption



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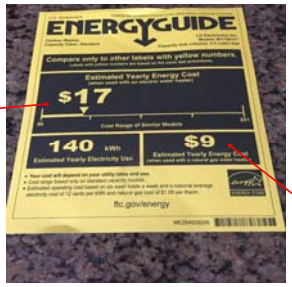
EnergyGuide Labels Promote Gas!

Cost with an electric water heater



EnergyGuide Label for a clothes washer

Cost with a natural gas water heater

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"Equivalent" Water Heater Comparison

▪40-gallon gas water heater
- ▪First Hour rating = 67 Gallons
- ▪Expected annual cost = $220

50-gallon electric water heater
- ▪First Hour rating = 62 Gallons
- ▪Expected annual cost = $419

Natural gas water heaters are so fast that a 40-gallon gas unit typically can do the job of a 50-gallon or larger electric unit

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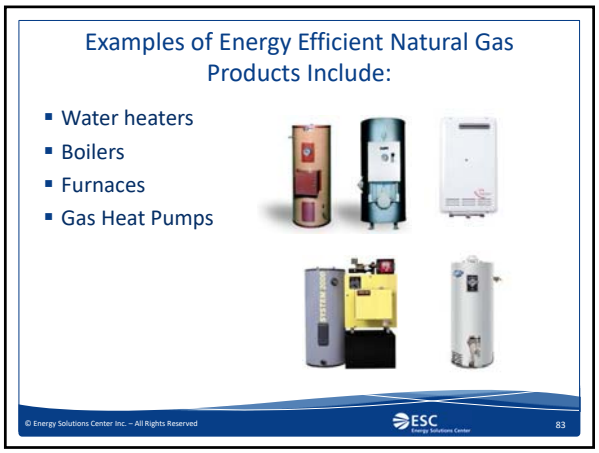

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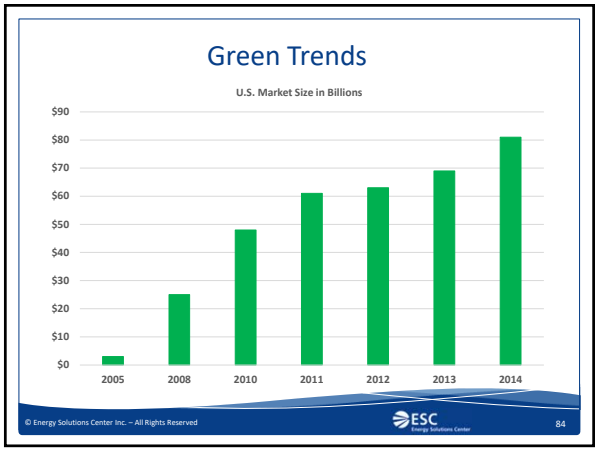

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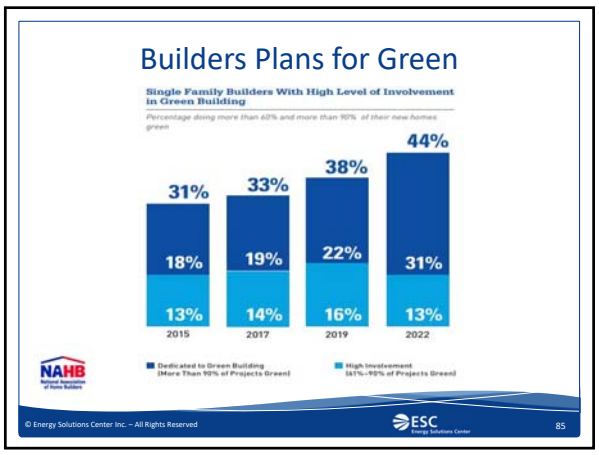

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How to Market Green

Selling Points for Consumers

- A healthier home environment through improved indoor air quality
- A more comfortable home due to fewer temperature variations
- A return on investment through energy savings and lower maintenance costs
- A positive environmental impact
- A reduction in the use of natural resources

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Hurdles to Building Green Homes

- Higher perceived first cost of a green home
- Lack of consumer education about green building
- Finding certified, knowledgeable builders
- Home market value and home sales
- Certification costs
- Communication among the team – from design to installation

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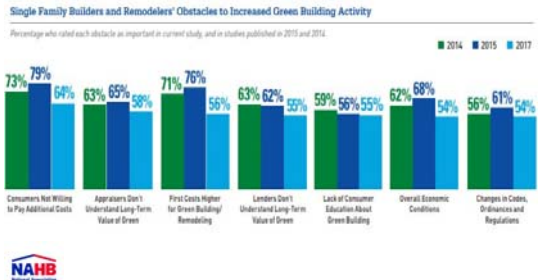
Hurdles – A Builder's Perspective



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Remember: Natural Gas is the Green/Energy Efficient Choice

- The cleanest burning fossil fuel
- Virtually no emissions of sulfur dioxide or particulate matter and far lower levels of "greenhouse" gases when burned
- Produces virtually no solid waste
- Delivered to the customer with around 90 % efficiency
- Almost 100% of natural gas is produced in North America

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Resources

Energy Solutions Center
www.energysolutionscenter.org
www.naturalgasefficiency.com

USGBC
www.usgbc.org

ENERGY STAR
www.energystar.gov

NAHB
http://www.nahbgreen.org/

AGA
www.aga.org

U.S. Department of Energy
www1.eere.energy.gov

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Rebates, Incentives, Tax Credits

- Under the Bipartisan Budget Act of 2018 a number of tax credits for residential energy efficiency were renewed.
- Tax credits for non-business energy property are now available retroactive to purchases made through December 31, 2017.
- Tax credits for all residential renewable energy products have been extended through December 31, 2021, and feature a gradual step down in the credit value.
- For additional info on tax credits and rebates go to: https://www.energystar.gov/about/federal_tax_credits

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