COLORADO LOCAL GOVERNMENT KICK-OFF MEETING
DECEMBER 5, 2007

ENERGY STAR

ENERGY STAR Qualified Homes:

Overview

WHAT IS ENERGY STAR?

The national, US government-backed

symbol for

cost-effective

energy efficiency

while assuring same or better performance

ENERGY STAR BACKGROUND

- **1992** launched
- **50+** products categories
- **1+ Billion** products sold
- **$14 Billion** annual savings
- **25 Million** vehicles equivalent GHG

GROWING BRAND

ENERGY STAR

ENERGY STAR:

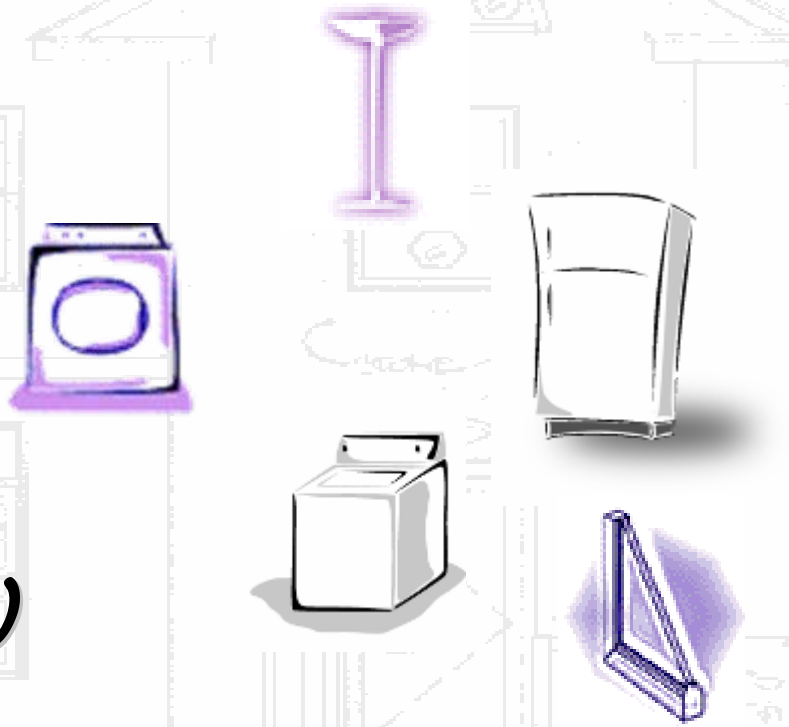
~70% awareness in 2004

70%+ households would recommend

95% likely to buy again in future

ENERGY STAR PRODUCTS FOR HOMES

- *Heating/Cooling Equipment*
- *Lighting*
- *Appliances*
  - *Clothes Washer*
  - *Refrigerator*
  - *Dishwasher*
  - *Dehumidifiers*
- *Windows (by Climate)*
- *Thermostats*
- *Ventilation Fans*

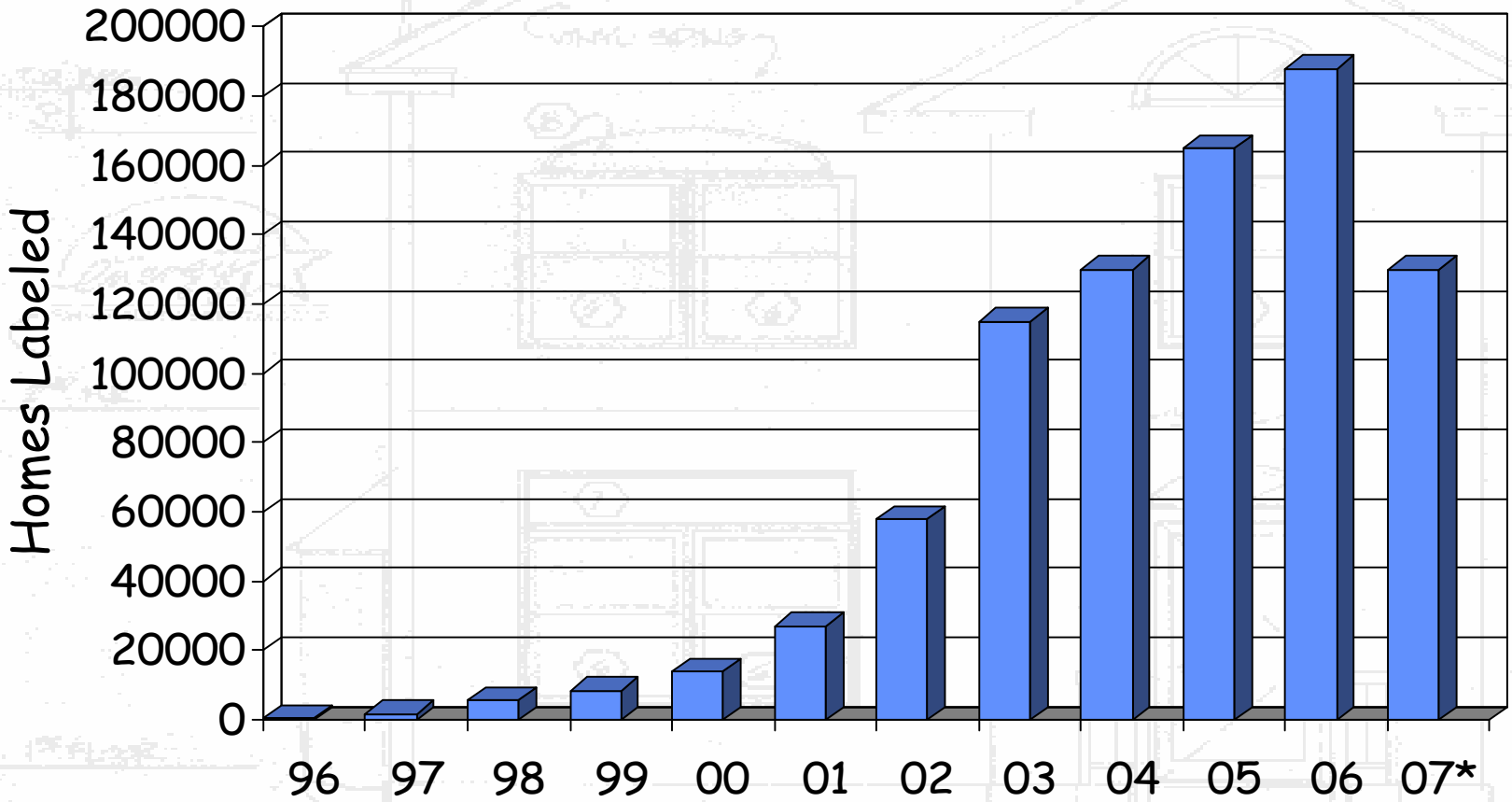


WHAT IS ENERGY STAR FOR HOMES?

- ***Voluntary***
- ***Truly Energy Efficient***
- ***Builder Recognition***

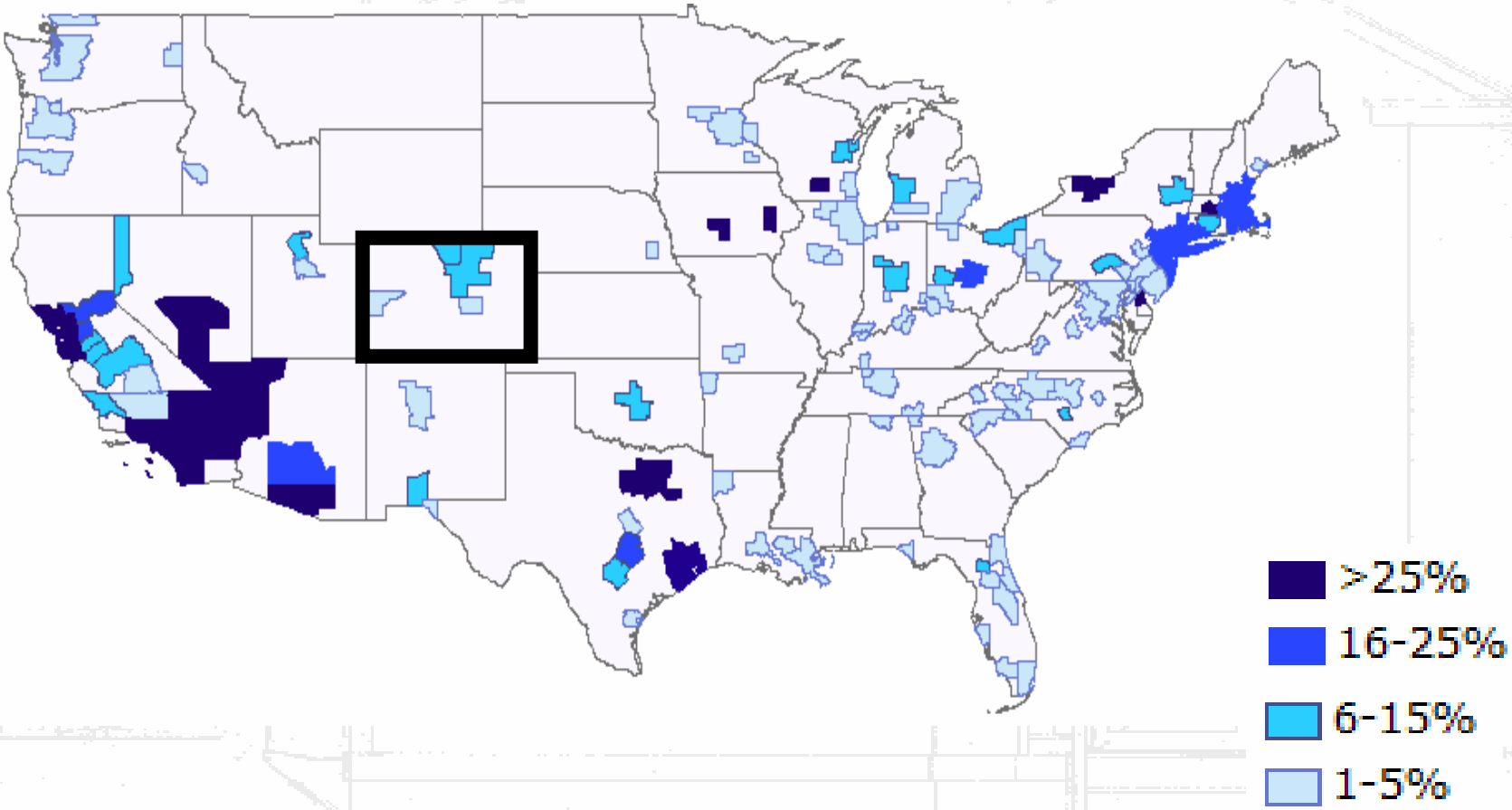
  Government-Backed Label
  Third-Party Verified
  Awards

RESULTS: EXPONENTIAL GROWTH



**Estimate based on Q1 and Q2 reporting results*

RESULTS: MARKET PENETRATION



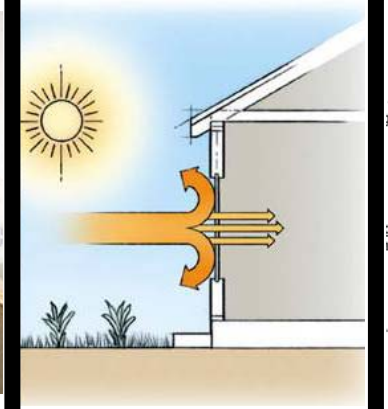
ENERGY STAR FOR HOMES METRICS

- ~5,000 Active Builder Partners
- 800,000+ Labeled Homes
- 20%+ Penetration in 25 Markets

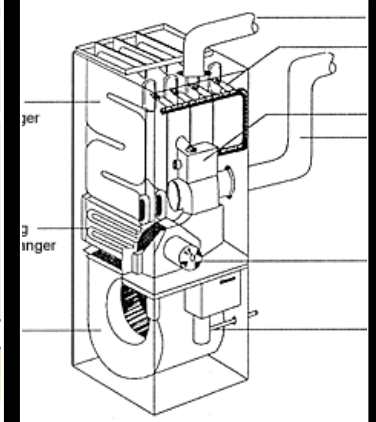
ENERGY STAR FOR HOMES OLD SPEC

Tight Ducts

Air Sealing



Advanced Windows

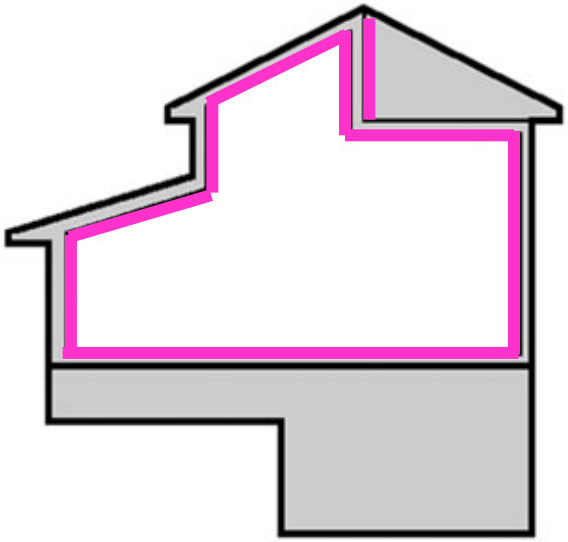


Efficient Equipment

Field Verified

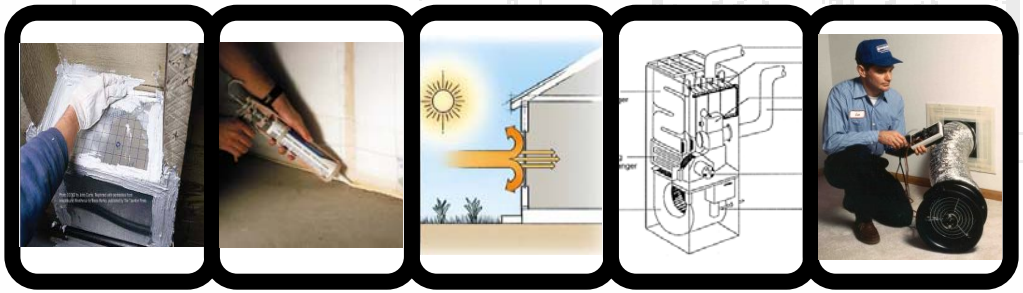
ENERGY STAR FOR HOMES NEW SPEC

Insulation Installation



Thermal Bypass

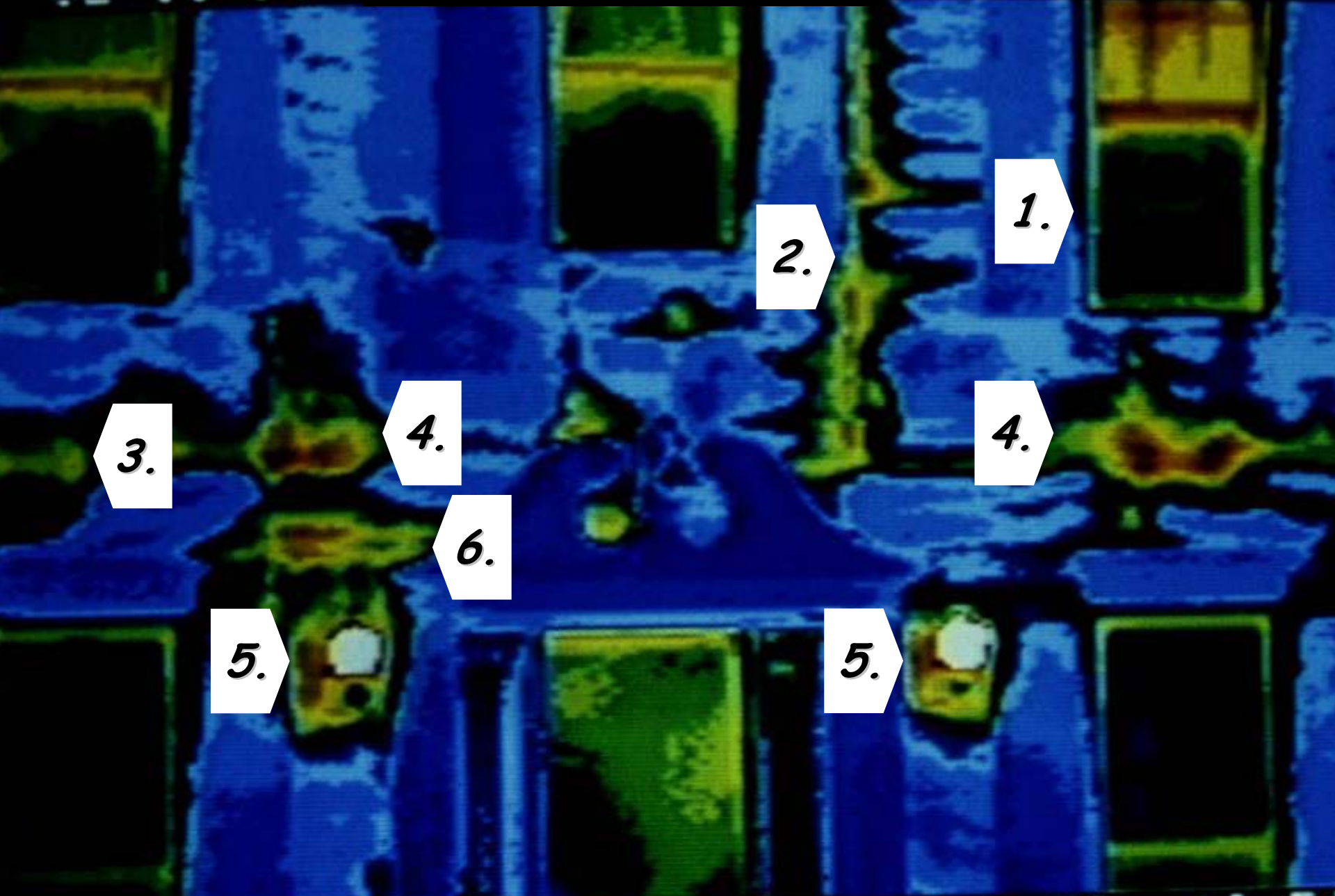
Right Sizing



SPI
IR PRO CAMERA

Defects Invisible

Defects Visible

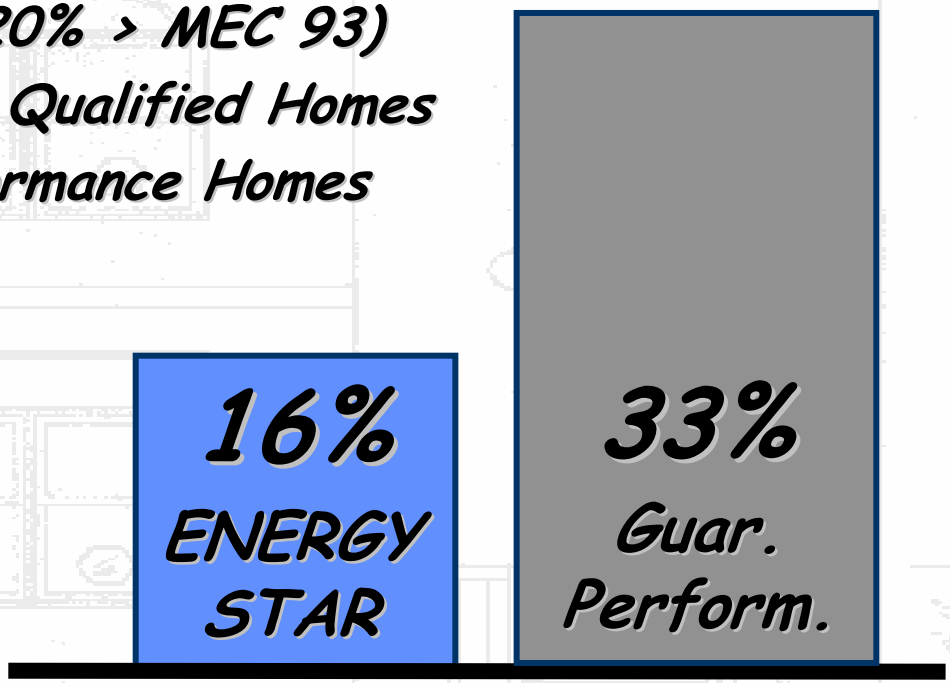


New Homes = Obsolete Competition

NEW SPEC: TRULY ENERGY EFFICIENT

AEC Study:

- ~7,000 homes (1998 and 2004)
- ~3,300 baseline (est. 20% > MEC 93)
- ~3,000 ENERGY STAR Qualified Homes
- ~800 Guaranteed Performance Homes



Energy Savings Compared to Baseline

Source: Measuring Public Benefit from Energy Efficient Homes [2005], Advanced Energy Corp.

NEW SPEC: COST-EFFECTIVE

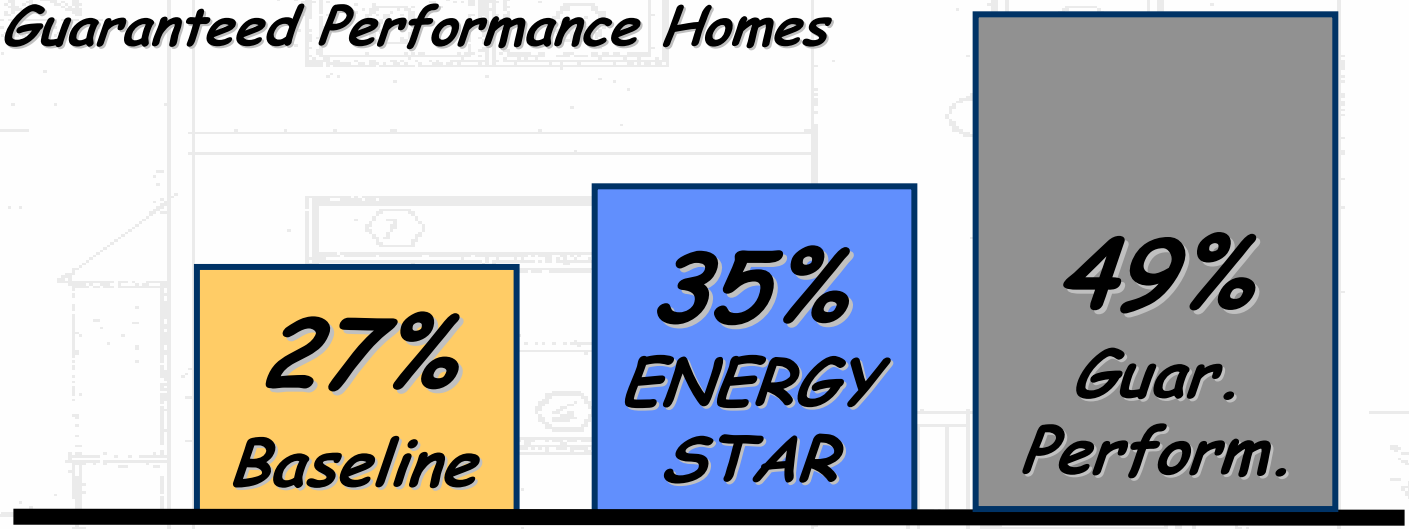
	Monthly	Annual
Utility Savings	$40	$480
Added Mortgage	$15	$180
Cost Savings	**$25**	**$300**

= $1,000's *for typical ownership period*

NEW SPEC: BETTER PERFORMANCE

AEC Study:

- ~700 new home owners direct-mail survey
- ~200 baseline homes (est. 20% > MEC 93)
- ~250 ENERGY STAR Qualified Homes
- ~235 Guaranteed Performance Homes



% Homeowners Completely Satisfied w/Comfort

Source: Measuring Public Benefit from Energy Efficient Homes [2005], Advanced Energy Corp.

How Builders Partner with ENERGY STAR

STEP ONE: SELECT A HERS RATER

ENERGY STAR

A NEW ENERGY STAR® QUALIFIED HOME IMPROVES OUR ENVIRONMENT
U.S. Environmental Protection Agency

About ENERGY STAR • News Room • FAQs Search Go

Products | Home Improvement | New Homes | Buildings & Plants | Partner Resources

- Qualified New Homes
- Find an ENERGY STAR Builder
- ENERGY STAR New Home Features
- Benefits for Homeowners
- For Residential Professionals
- Join ENERGY STAR

Home > New Homes > Partner Locator

Find an ENERGY STAR Partner

Find home builders and developers that build ENERGY STAR qualified new homes, lenders that offer energy efficient mortgages, utilities that offer special incentives to buyers, builders and developers of ENERGY STAR qualified new homes, and home energy raters that can verify the energy efficiency of a home.

Find a

- ○ **Site-Built Home Builders and Developers** constructing traditional or systems-built (Modular, ICF, SIP) homes on site
- ○ **Manufactured Home Builders** providing factory-built, HUD code-based homes
- ◉ **Home Energy Raters** verifying the performance of ENERGY STAR qualified new homes
- ○ **Utilities/Sponsors** providing assistance to ENERGY STAR home buyers and builders
- ○ **Lenders** offering special financing for ENERGY STAR qualified new homes

State
Colorado

Search

EIC Inc. / Comfort Home Corporation	Bailey, CO Denver, CO	303-838-5405 717-581-8848	1996	2571	19890	0
Energy and Environmental Ratings Alliance	CO	785-537-2425	2001	2466	2900	0
Energy Inspectors Corporation	CO	702-365-8080	2001	12332	40641	0
EnergyLogic	Denver; Front Range; Colorado Springs; Mountains, CO	800-315-0459	2001	1278	6570	6563
Environments for Living/Masco	CO	866-912-7233	2002	16296	47403	285
Frostbusters Home Energy $avings	Grand Junction, Mesa County & Vicinity, CO	970-255-1122	2007	New Partner	New Partner	0
Gary Starritt	Colorado Springs; Denver, CO	303-758-9543	2006	4	16	16
Gary Tollefson Services	Austin Western Colorado - Grand Junction, CO	970-835-3825	2001	8	47	47
Gordon Inspections, LLC	Las Animas, Huerfano Counties, Trindad, Walsenburg, CO	719-845-0222	2007	New Partner	New Partner	0
Headwaters Energy & Finance	Western, CO	719-395-9255	2006	9	10	10
Home Performance Solutions, LLC	CO	720-985-8445	2004	104	591	93
Home Remedy	Front Range; Denver, CO	303-585-1944	2006	New Partner	New Partner	0
Lightly Treading	Denver, CO	303-733-3078	2000	209	1162	1162
Scott Home Inspection EXIT	Denver, Fort Collins, Greeley, Boulder, Longmont, Loveland, CO	970-532-2424	2007	New Partner	New Partner	0

ALSO CHECK SPONSOR PROGRAMS

ENERGY STAR

New Homes Partner Results in Colorado

Printable: Results 1 - 6

Utilities and other regional energy efficiency program sponsors play a key role in promoting the construction and sales of ENERGY STAR qualified new homes. Utilities, state energy offices, and other sponsors listed here have partnered with ENERGY STAR and offer various incentives to homebuyers and businesses involved with building and marketing ENERGY STAR qualified new homes, including technical assistance, marketing support, home energy performance verification, and financial incentives. Please contact the utilities/sponsors directly for more details and current information. The partner's main phone number is displayed where a service area-specific phone number is not available.

Incentives Available in Colorado

Select another partner type: Utilities/Sponsors

Select another location: Colorado Go

Results **1** - **6** of 6

All # A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Name	Service Area/Phone		Partner Since	Homes Sponsored (Jul 2006-Jun 2007)*	Homes Sponsored (Grand Total)*	Homes Sponsored (State Total)*	Incentive Type (call partner for more info)
Building America EXIT	CO	303-384-7433	2006	4936	20273	7	
Built Green Colorado	Denver, CO	303-788-1400	2007	New Partner	New Partner	0	Consumer Education/Marketing Support
Colorado Springs Utilities EXIT	Colorado Springs, CO	719-668-3730	2006	254	254	254	Homebuilder Assistance
Environments for Living/Masco	CO	866-912-7233	2002	2821	16750	46	
Governor's Energy Office	CO	303-894-2383	2005	23	46	46	Home Rating Assistance
Manufactured Housing Research Alliance (MHRA) EXIT	CO	212-496-0900	2005	1816	7976	36	Consumer Education/Marketing Support, Homebuilder Assistance

Results **1** - **6** of 6

All # A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

STEP TWO: BENCHMARK

- *HERS Rating Plan Analysis*
- *ENERGY STAR Qualified Homes BOP*
  - *National*
  - *County*

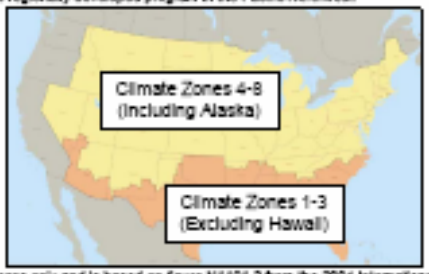
ENERGY STAR Qualified Homes
National Builder Option Package

The requirements for the ENERGY STAR Builder Option Package (BOP) are specified in the table below.

To qualify as ENERGY STAR using this BOP, a home must meet the requirements specified, be verified and field-tested in accordance with the HERS Standards by a RESNET-accredited Provider, and meet all applicable codes.

	Hot Climates [1] (2004 IRC Climate Zones 1,2,3)	**Mixed and Cold Climates** [1] (2004 IRC Climate Zones 4,5,6,7,8)
Cooling Equipment (Where Provided)	Right-Sized [2]: • ENERGY STAR qualified A/C *(14 SEER / 11.5 EER)*; OR • ENERGY STAR qualified heat pump [3] *(14 SEER / 11.5 EER / 8.2 HSPF)*	Right-Sized [2]: • 13 SEER A/C; OR • ENERGY STAR qualified heat pump [3] *(14 SEER / 11.5 EER / 8.5 HSPF)*
Heating Equipment	• 80 AFUE gas furnace; OR • ENERGY STAR qualified heat pump [2,3] *(14 SEER / 11.5 EER / 8.2 HSPF)*; OR • 80 AFUE boiler; OR • 80 AFUE oil furnace	• ENERGY STAR qualified gas furnace *(90 AFUE)*; OR • ENERGY STAR qualified heat pump [2,3] *(See Note 3 for specifications)*; OR • ENERGY STAR qualified boiler *(85 AFUE)*; OR • ENERGY STAR qualified oil furnace *(85 AFUE)*
Thermostat [3]	ENERGY STAR qualified thermostat (except for zones with radiant heat)	
Ductwork	Leakage [4]: ≤ 4 cfm to outdoors / 100 sq. ft.; AND R-6 min. insulation on ducts in unconditioned spaces [5]	
Envelope	• Infiltration [6,7] (ACH50): 7 in CZ's 1-2 | 6 in CZ's 3-4 | 5 in CZ's 5-7 | 4 in CZ 8; AND • Insulation levels that meet or exceed the 2004 IRC [8]; AND • Completed Thermal Bypass Inspection Checklist [9]	
Windows	ENERGY STAR qualified windows or better (additional requirements for CZ2 and CZ4) [10, 11, 12]	
Water Heater [13]	Gas (EF): 40 Gal = 0.61 | 50 Gal = 0.57 | 80 Gal = 0.53 Electric (EF): 40 Gal = 0.93 | 50 Gal = 0.92 | 80 Gal = 0.89 Oil or Gas [14]: Integrated with space heating boiler	
Lighting and Appliances [15,16]	Five or more ENERGY STAR qualified appliances, light fixtures, ceiling fans equipped with lighting fixtures, and/or ventilation fans	

Note: Due to the unique nature of some state codes and/or climates, EPA has agreed to allow regionally-developed definitions of ENERGY STAR in California, Hawaii, and the Pacific Northwest to continue to define program requirements. The States of Montana and Idaho may use either the requirements of the national program or the regionally-developed program in the Pacific Northwest.



Map is for illustrative purposes only and is based on figure N1101.2 from the 2004 International Residential Code (IRC).

Used Homes = Obsolete Competition

ENERGY STAR Qualified Homes
Builder Option Package Notes

2004/2006 IECC Climate Zone[1] – 6	ENERGY STAR Window Zone[18] – Northern

The requirements for the ENERGY STAR Builder Option Package (BOP) are specified in the table below.

To qualify as ENERGY STAR using this BOP, a home must meet the requirements specified, be verified and field-tested in accordance with the HERS Standards by a RESNET-accredited Provider, and meet all applicable codes.

Cooling Equipment (Where Provided)	Right-sized[2] ≥13 SEER A/C; OR Right-sized[2] ≥14 SEER/ 11.5 EER/ 8.5 HSPF ENERGY STAR qualified heat pump [3]
Heating Equipment	≥90 AFUE ENERGY STAR qualified gas furnace; OR ≥14 SEER/ 11.5 EER/ 8.5 HSPF ENERGY STAR qualified heat pump [2, 3] ; OR ≥90 AFUE ENERGY STAR qualified boiler; OR ≥85 AFUE ENERGY STAR qualified oil furnace
Thermostat [3]	ENERGY STAR qualified thermostat (except for zones with mass radiant heat)
Ductwork	Leakage [4] : ≤ 4 cfm to outdoors / 100 sq. ft.; AND Insulation [5] : ≥ R-6 insulation on ducts in unconditioned spaces
Envelope	≤ 5 ACH50 — Infiltration [6,7]
	≤ Reference UA — UA Alternative Approach [8]; OR ≥ 38 R-Value — Ceiling Insulation [8]; AND (if applicable) ≥ 30 R-Value — Cathedral Ceiling Insulation [8]; AND (if applicable) ≥ 19 R-Value — Wood Frame Wall Insulation [8]; OR ≥ 13 + 5 R-Value — Wood Frame Wall Insulation and Sheathing AND (if applicable) ≥ 30 R-Value — Floor Over Unconditioned Space Insulation [8]; AND (if applicable) ≥ 10 R-Value — Crawlspace Wall Insulation Continuous [8]; OR (if applicable) ≥ 13 R-Value — Crawlspace Wall Insulation Framed [8]; AND (if applicable) ≥ 10 R-Value — Basement Wall Insulation Continuous [8]; OR (if applicable) ≥ 13 R-Value — Basement Wall Insulation Framed [8]; AND (if applicable) ≥ 10 R-Value — Slab Insulation at 2 feet Depth [8]; AND
	Completed Thermal Bypass Inspection Checklist [9]
Windows [10,11,12]	≤ 0.35 U-Value ≤ Any SHGC
Water Heater [13]	Gas (EF): 40 Gal = 0.61 | 60 Gal = 0.57 | 80 Gal = 0.53 Electric (EF): 40 Gal = 0.93 | 50 Gal = 0.92 | 80 Gal = 0.89 Oil or Gas [14]: Integrated with space heating boiler
Lighting and Appliances [15,16]	Five or more ENERGY STAR qualified appliances, light fixtures, ceiling fans equipped with lighting fixtures, and/or ventilation fans

Energy Savings Values and associated average monthly savings are provided at the end of this document for the purpose of applying for an energy efficient mortgage. [17]

STEP THREE: JOIN IF FITS BUSINESS

ENERGY STAR

ONLINE PARTNERSHIP AGREEMENT
HOME BUILDER

ENERGY STAR

Contact ENERGY STAR | Exit Application

STEP 1: Preparation | STEP 2: Select Partner Types | STEP 3: Enter Organization Information | STEP 4: Add Contacts | STEP 5: Enter Home Builder Details | STEP 6: Review Agreement | STEP 7: Sign and Submit

Thank you for your interest in becoming an ENERGY STAR Partner.

Step 1: Prepare by doing the following:

1. **Review the qualifications for Partnership** - To qualify for partnership as a homebuilder, you must be responsible for the building or installing of whole homes, either on-site or in plant environment. Each unique entity (office, plant, division or subsidiary) should submit its own partnership application.
2. **Review ENERGY STAR's commitments, terms, and disclaimers** - Review the commitments made between ENERGY STAR and Partners associated with this Partnership Agreement, as well as general terms and disclaimers for the Partnership Agreement.
3. **Determine a Signatory** - Ensure that your organization has the contact information for a signatory or company representative authorized to bind your organization to the terms of this Agreement.
4. **Gather information** - Ensure that you have all the necessary information to fill out the Agreement. Review a summary of the information that you will be asked to provide.
5. **Continue** - If your organization qualifies for Partnership and agrees to the commitments, please Continue.

Continue

STEP FOUR: PARTICIPATE

- *Build Homes*
- *Label Homes*
- *Sell Benefits*

HOW TO GET MORE INFORMATION

On the Web at:

http://www.energystar.gov/homes

COLORADO LOCAL GOVERNMENT KICK-OFF MEETING
DECEMBER 5, 2007

ENERGY STAR

ENERGY STAR Qualified Homes:

Best Practice Guidelines

ENERGY STAR QUALIFIED HOMES BEST PRACTICE GUIDELINES

EPA OBSERVATIONS...

- ~80 Sponsor Programs
- Significant Variations
  - Design
  - Marketing/Implementation
  - Evaluation
- No Coordination
- Wide Variety of Incentives
- Growth <u>Not</u> Correlated to Incentives

ENERGY STAR QUALIFIED HOMES BEST PRACTICE GUIDELINES

UTILTY/STATE PROGRAM INCENTIVES

- ***Cash Rebates***
  - *Home*
  - *ENERGY STAR Products*
  - *High-Efficiency Equipment*
  - *Model Homes*
- ***Free/Subsidized HERS Rating***
- ***Advertising***
  - *Coop*
  - *Sponsor Paid*
- ***Free/Subsidized Training***
- ***Free Marketing Materials/Advertising***
- ***Discounted Utility Bills for Owners***

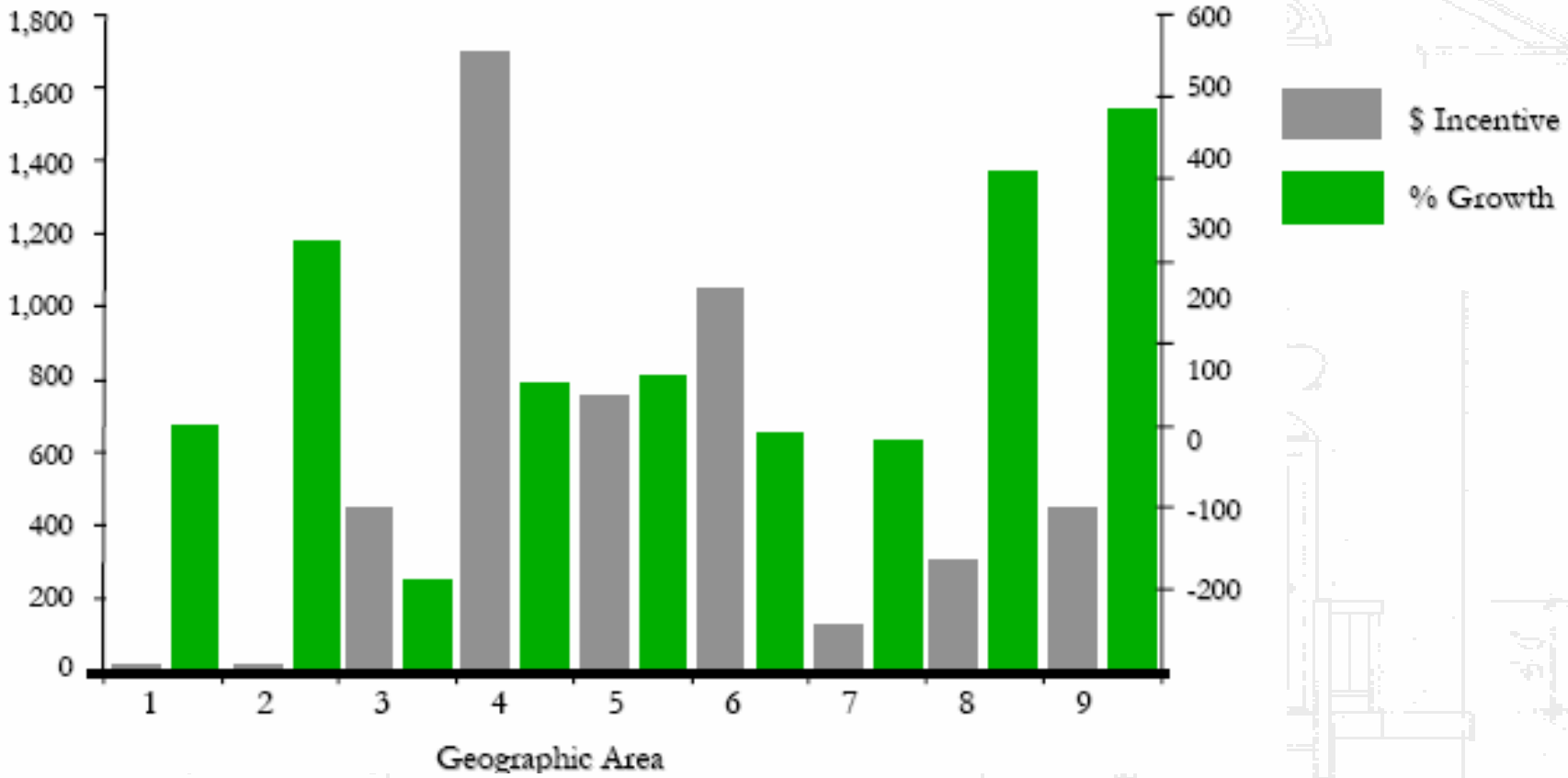
ENERGY STAR QUALIFIED HOMES BEST PRACTICE GUIDELINES

LOCAL GOVERNMENT INCENTIVES

- ***Discounted/Delayed Permit Fees***
- ***Priority Code Processes***
  - *Expedited Plan Approvals*
  - *Priority Field Inspections*
- ***Facilitated Incentives with Local Partners***
  - *Discounted Utility Hook-up Fees*
  - *Discounted Mortgage Interest Rates*

ENERGY STAR QUALIFIED HOMES BEST PRACTICE GUIDELINES

INCENTIVES AND GROWTH



ENERGY STAR QUALIFIED HOMES BEST PRACTICE GUIDELINES

APRIL 2007 ATLANTA MEETING

ENERGY STAR

Reps from ~35 Sponsors:

- Share 'Success Stories'
- Identify Lessons Learned
- Identify Best Practices

- Design
- Marketing/ Implementation
- Evaluation

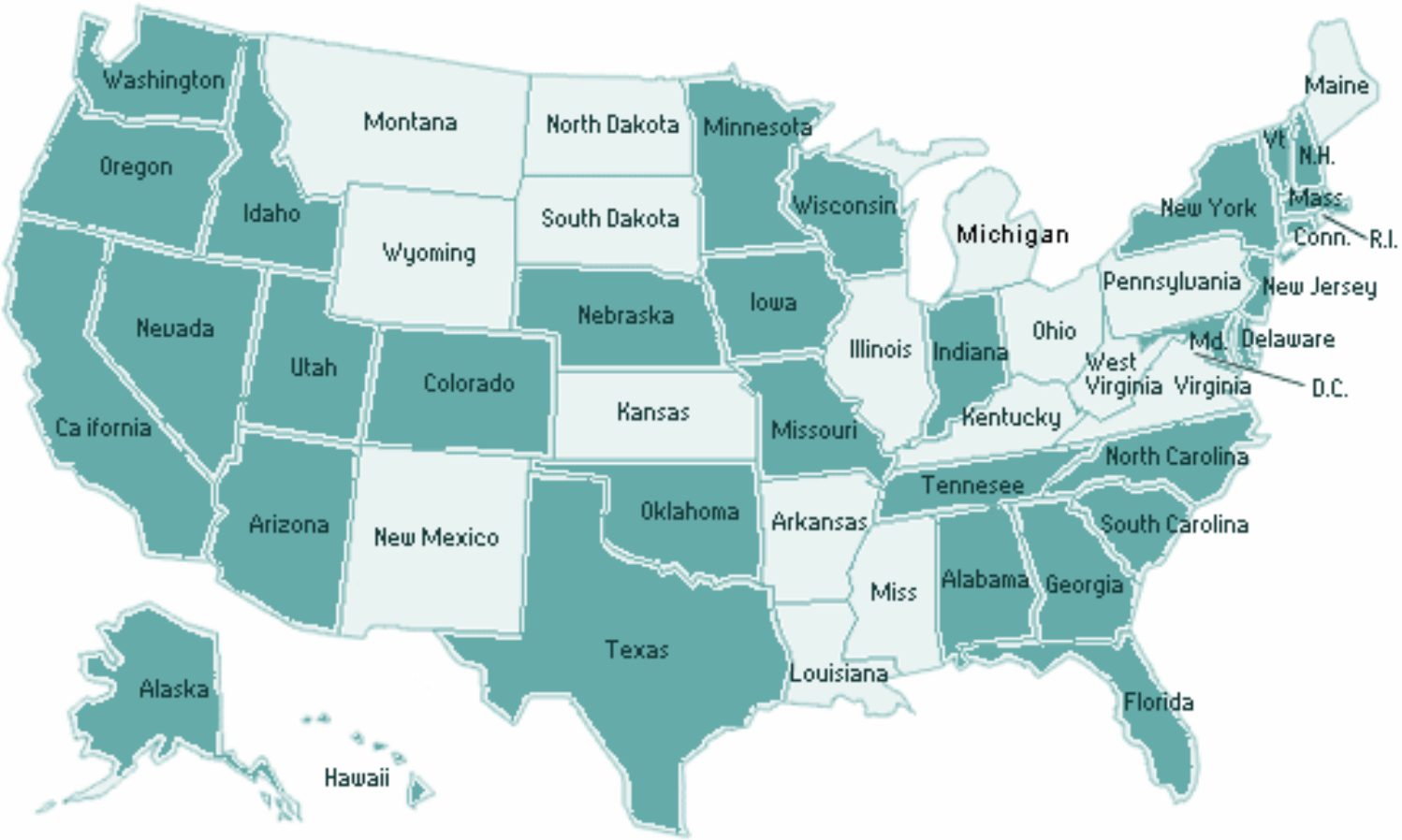
ENERGY STAR QUALIFIED HOMES BEST PRACTICE GUIDELINES

WHY SPONSOR?

- ***Off-the-Shelf Proven Solution***
  - *Established Brand*
  - *Strong Technical Specifications*
  - *Implementation Policies*
  - *Marketing Tools*
  - *Sales Training*
  - *Technical Support*
- ***Increased Customer Value***
- ***Address Business Objectives***

ENERGY STAR QUALIFIED HOMES BEST PRACTICE GUIDELINES

STATES WITH ACTIVE SPONSORS



ENERGY STAR QUALIFIED HOMES BEST PRACTICE GUIDELINES

BUILDER BARRIERS

ENERGY STAR

1. High Cost

[first cost, participation cost]

2. Lack of Consumer Demand

[perception do not value, lack of education, sales agent education]

3. Lack of Sales Skills

[selling the invisible, trained sales agents]

4. Industry Resistant to Change

[fear of unknown, requirements, market conditions, perception already efficient, internal champions, complexity, competing programs]

5. Lack of Technical Infrastructure

[HERS, subcontractors, technical solutions, building science experts]

ENERGY STAR QUALIFIED HOMES BEST PRACTICE GUIDELINES

USING THE GUIDE

ENERGY STAR

Three Modules:

1. Program Design
2. Program Marketing and Implementation
3. Program Evaluation

1. Introduction
2. Lessons Learned
3. Best Practices
4. Success Stories

Best Practices Checklist: Program Design

1. High Cost	• Consider the most effective options for program incentives (e.g., consider successful strategies that worked in similar markets) • Train builders how to sell the value of energy-efficient homes
2. Lack of Consumer Demand	• Provide funding to educate consumers • Choose the most effective options for educating consumers (e.g., consult consumer research) • Develop consumer testimonials
3. Lack of Sales Skills	• Develop builder sales training • Develop train-the-trainer sales programs • Develop point-of-sale materials and/or templates for builders (e.g., displays, banners, fact sheets, homeowner manuals)
4. Industry Resistance to Change	• Create an effective value message for recruiting builders • Consider incentives that effectively address builder business priorities (e.g., suggest linking incentives to individual sales staff) • Incorporate partner recognition into the program (e.g., awards, advertising public relations, builder listing)
5. Lack of Technical Infrastructure	• Develop local HERS infrastructure • Develop technical support (e.g., reference materials, how-to guides) • Develop train-the-trainer for technical subjects

Best Practices Checklist: Program Marketing and Implementation

1. High Cost	• Provide incentives, but be sure to allocate a significant portion for marketing • Consider incentives for model homes promoting the ENERGY STAR brand
2. Lack of Consumer Demand	• Provide funding for builders to educate consumers (e.g., cooperative advertising) • Educate consumers on the value of ENERGY STAR (e.g., public relations, Web information, articles, ENERGY STAR Outreach Partnership Campaign, advertising, bill inserts) • Link incentives to homes events (e.g., Parade of Homes) • Develop consumer testimonials • When growth is sufficient, integrate ENERGY STAR into regional MLS • Consider training for appraisers and lenders • Cross market with ENERGY STAR qualified products
3. Lack of Sales Skills	• Develop builder sales agent/real estate agent training • Provide guidance on how to use available marketing tools • Develop train-the-trainer sales training programs • Promote ENERGY STAR Marketing Toolkit • Provide a homeowner manual or insert for builders • Consider linking incentives to the builder sales person to better motivate him/her to sell ENERGY STAR
4. Industry Resistance to Change	• Consistently and effectively convey the value message • Promote incentives if offered • Provide partner recognition (e.g., awards, listing on the program Web site and advertisements) • Publish articles in local HBA newsletter • Provide performance feedback to builders • Sponsor ENERGY STAR events • Promote successful builders to attract their competitors
5. Lack of Technical Infrastructure	• Recruit/nurture the HERS infrastructure • Consider facilitating a regional HERS association • Provide tight QA/QC for HERS verification • Provide technical support • Provide train-the-trainer technical training

Best Practices Checklist: Program Evaluation

1. High Cost	• Establish baseline energy costs with utility billing analysis • Evaluate energy savings with utility billing analysis • Evaluate actual peak-demand reduction
2. Lack of Consumer Demand	• Conduct customer surveys • Measure impact of all marketing efforts • Monitor frequency of and types of complaints
3. Lack of Sales Skills	• Monitor effectiveness of all sales training • Monitor effectiveness of sales/marketing tools
4. Industry Resistance to Change	• Track program data (e.g., core metrics) • Conduct builder surveys to measure satisfaction and identify most useful tools
5. Lack of Technical Infrastructure	• Evaluate integrity of the HERS process • Evaluate delivery of key technical measures (e.g., tight ducts, Thermal Bypass Checklist)

ENERGY STAR QUALIFIED HOMES BEST PRACTICE GUIDELINES

KEY LESSONS LEARNED

- Every market is different; **research** first
- **HERS infrastructure** is critical
- Larger **incentives** are not always better
- Always include strong **marketing** component
  - Communicate benefits simply
  - Frequency
  - Touch-points
- **Training** is worth investing in experts
- Incorporate **evaluation** from the start
- **Be disciplined** with evaluation

APPENDICES

- ***Utility/Sponsor Fact Sheet***
- ***April 2007 Sponsor Meeting Info:***
  - *Agenda*
  - *Presentations*
  - *Feedback*
- ***WECC Homeowner Manual***
- ***2006 North Carolina ENERGY STAR Conference Agenda***

HOW TO GET MORE INFORMATION

On the Web at:

http://www.energystar.gov/homes