



ENERGY STAR for Multifamily High-Rise (MFHR) Buildings

Complete the ES Residential Picture

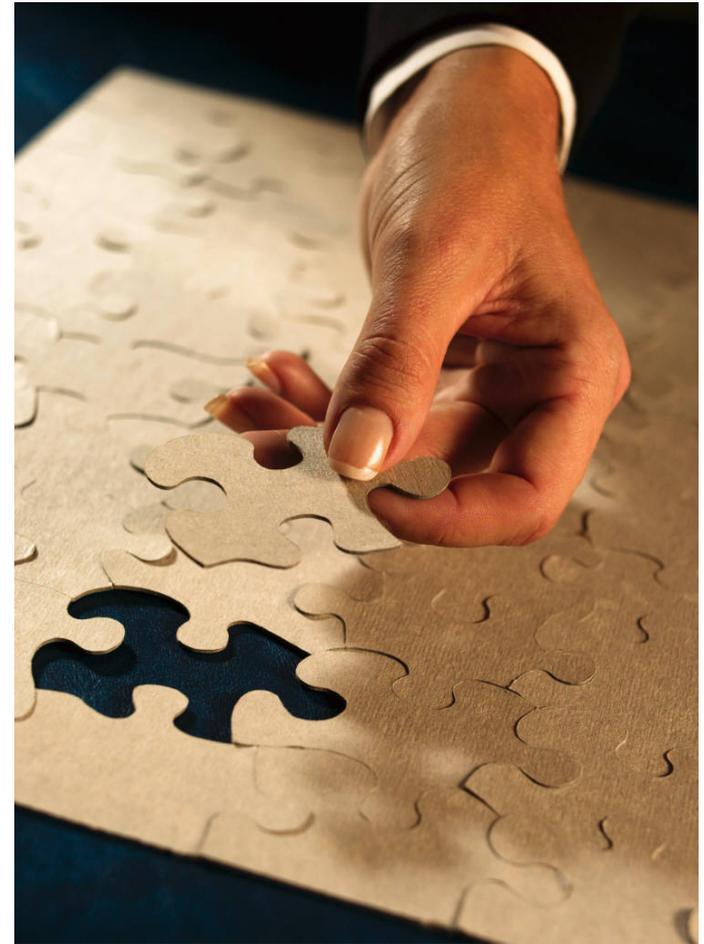


- **New Homes Program**

- Single family
 - Low rise MF units
 - Manufactured Homes
- } 95%

- **Multifamily High Rise**

- 4 or 5 stories (central systems)
 - 6 or more stories
- } 5%



Residential or Commercial?



ES Residential

- Asset Based
- Building Science

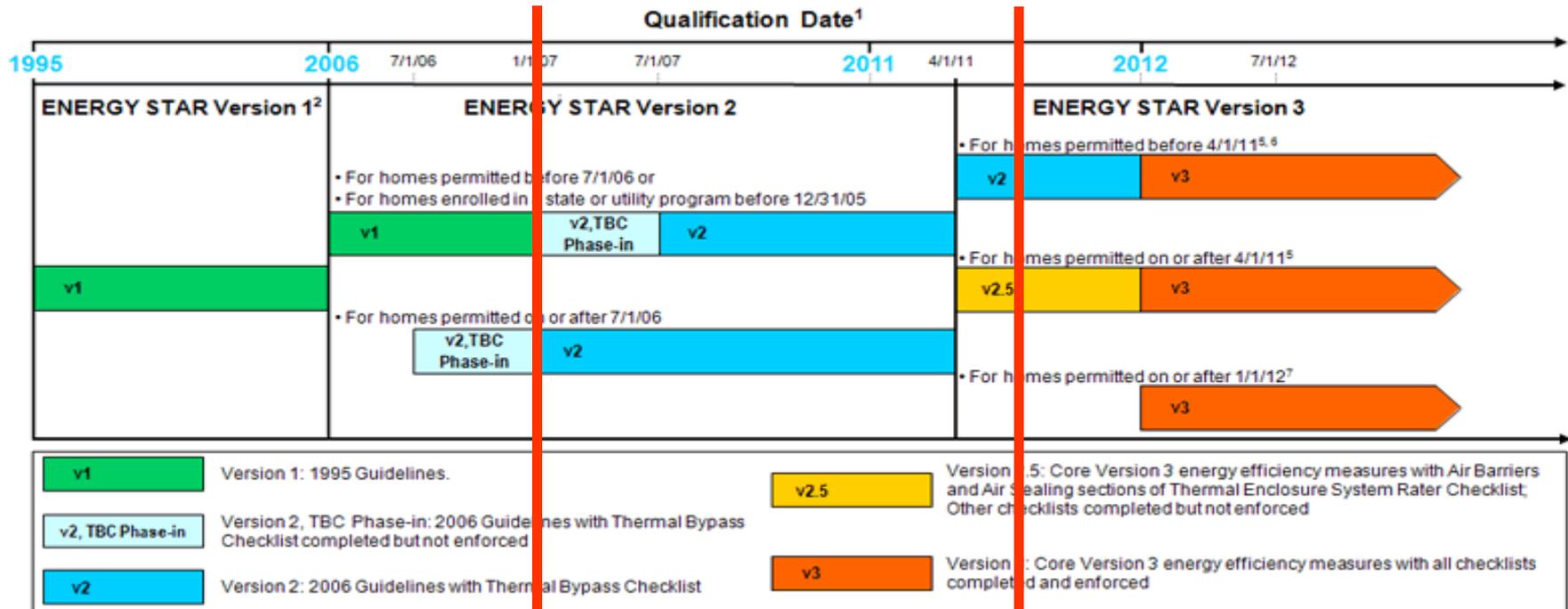
Well designed set of requirements that are cost effective and capture market ready building science

ES Commercial

- Performance Based
- Portfolio Manager

Nationally representative data set of whole building consumption data for MFHR buildings

New Homes vs. MFHR Timeline



ES MFHR V1 ≈ ES NH V2

ENERGY STAR MFHR
Version 1
Mid 2011

ESMFHR \approx ESNH

What Is The ENERGY STAR MFHR Program?



- Designed to be at least 15% more efficient than ASHRAE 90.1-2007
- Whole-building performance
- Third-party verified
- Voluntary – proof of your leadership



ASHRAE Standard 90.1-2007 and Appendix G



ASHRAE 90.1-2007

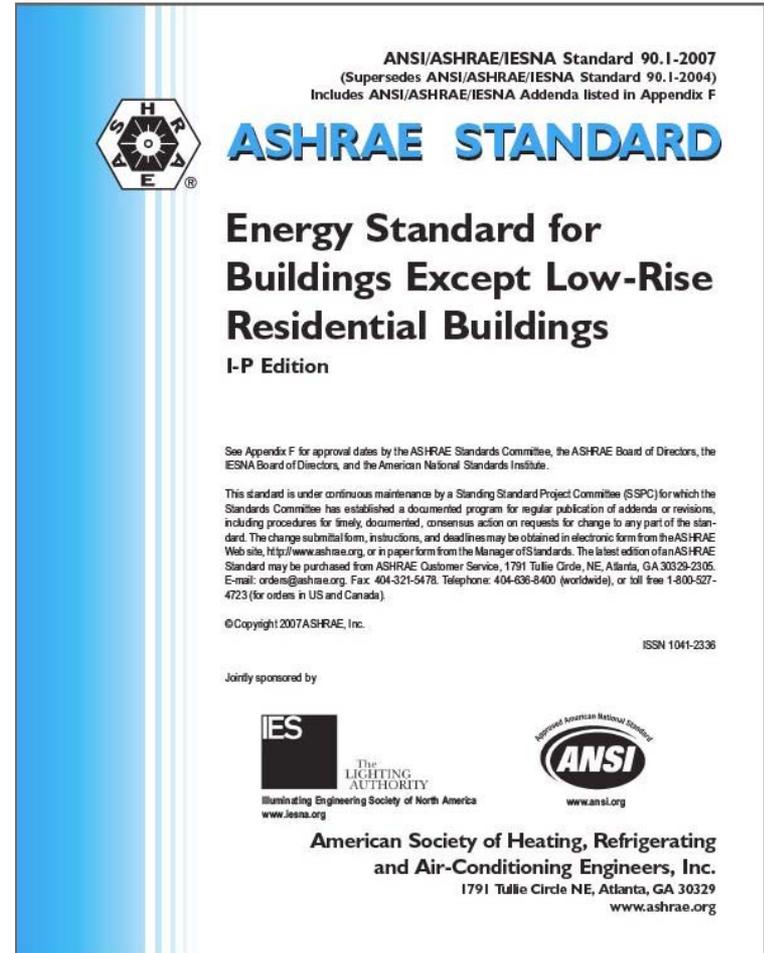
- Minimum requirements for the energy-efficient design of high-rise multifamily buildings

Appendix G

- Protocols for generating an energy performance rating for buildings that exceed the requirements of ASHRAE 90.1-2007

Program Standard

- LEED Mid-Rise
- Enterprise Green Communities



Brand Advantage



=

Brand Shorthand:

- **Energy Efficient**
- **Credible**
- **Environmental Leadership**

ENERGY STAR Qualified MFHR Buildings Feature



Effective Insulation



Properly Sized Equipment



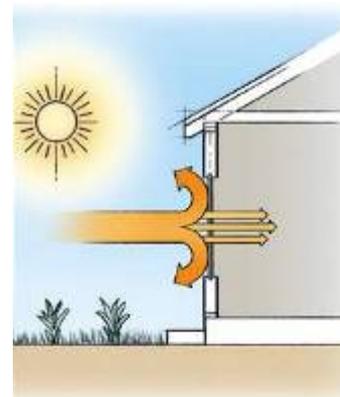
Tight Construction and Ducts



ES Lighting



High Efficiency Appliances

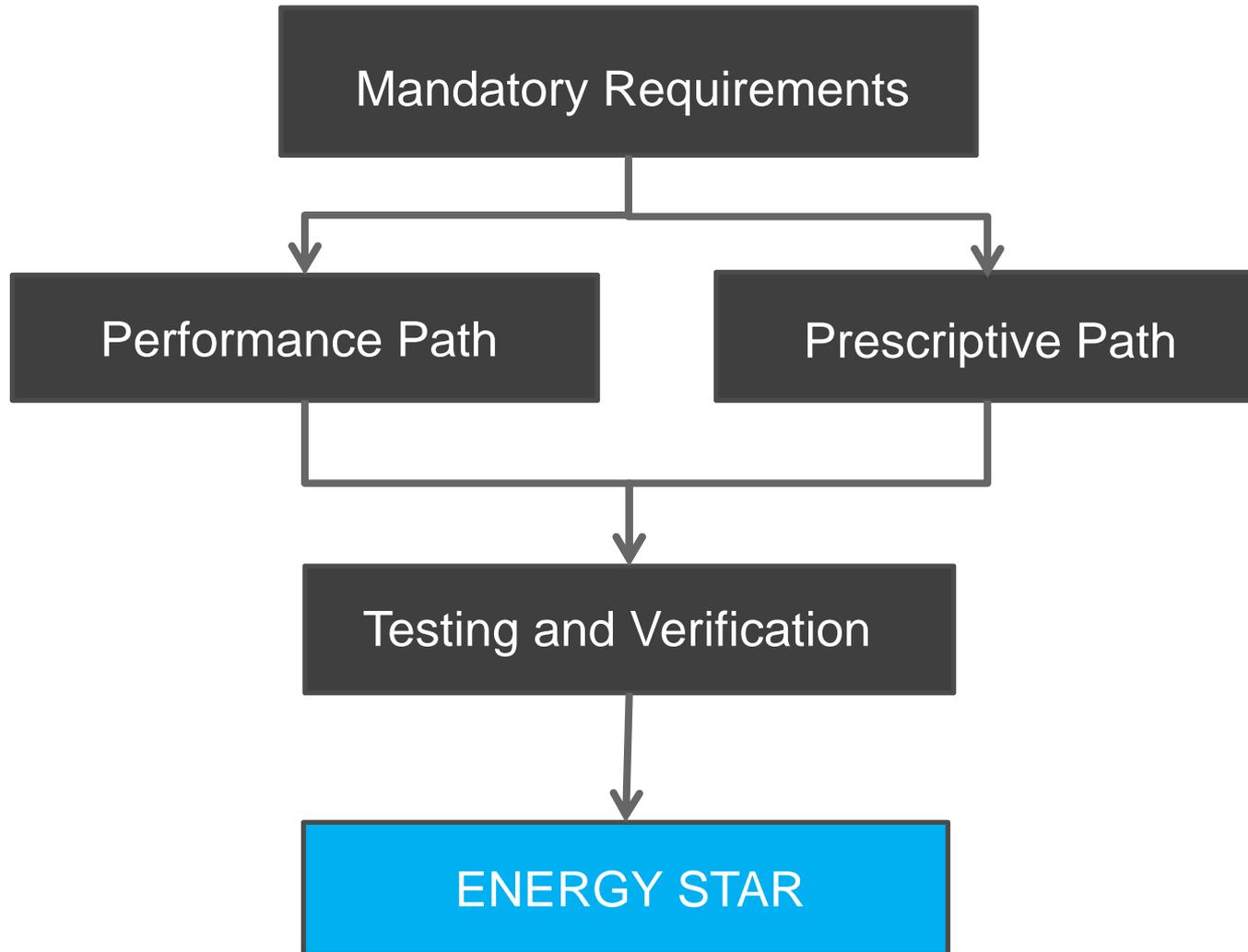


High Performance Windows



Third-Party Verification

Pathways to ENERGY STAR



Value Proposition



Occupants

- Improved indoor air quality
- Improved comfort
- Lower Utility Bills

ESMFHR \neq ESNH

Project Design and Development



New Homes

- 3-12 months with small design team
- REM/Rate (2 to 4 Hours)

MFHR

- 2-5 years with large design team with dynamic members
- 90.1 Compliant Software (30 - 40 Hours)

Baseline & References



New Homes

- International Residential Code
- International Energy Conservation Code
- ASHRAE 62.2

MFHR

- ASHRAE 90.1
- ASHRAE 90.1 Appendix G
- ASHRAE 62.2 and 62.1

Testing and Verification

New Homes

- Rater
- Version 2 Thermal Bypass Checklist
- Version 3 Checklists
- Verification (2 site visits)

MFHR

- Architect/Engineer
- Testing and Verification Protocols
- T&V Worksheets
- Verification (5 to 10 site visits)

New Homes

- Rater reports qualified homes to EPA at completion
- Rater labels home

MFHR

- Design Submittal prior to construction
- As-Built Submittal at completion
- EPA provides confirmation that the project has earned the ES



The Market

Multifamily Market



Demand for higher-density homes is expected to hit new highs by 2015 due to an influx of:

- 78 million downsizing baby boomers
- 78 million college graduates
- 9 million immigrants

Source: U.S. Census Bureau

Multifamily

Hot Topics: Presidential Seminar | Passive House | Slideshows



From: BUILDER 2011 | Posted on: March 24, 2011 2:48:00 PM

Hottest Multifamily Markets for 2011

This is where the multifamily action is likely to be, based on 2010 permit data.

By: Boyce Thompson

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Rank	Metro	2010 Permits	Increase/Decrease
1	New York-Wayne-White Plains NY-NJ (Div.)	8,305	+2%
2	Houston-Baytown-Sugar Land, TX (MSA)	5,169	+4%
3	Los Angeles-Long Beach-Glendale, CA (Div.)	4,784	+63%
4	Dallas-Plano-Irving, TX (Div.)	3,852	-15%
5	Seattle-Bellevue-Everett, WA	3,692	+57%
6	San Jose-Sunnyvale-Santa Clara, CA (MSA)	3,327	+622%
7	Washington-Arlington-Alexandria, DC-VA-MD-WVA (MSA)	2,501	+16%
8	Chicago-Naperville-Joliet, IL (Div.)	2,361	+73%
9	Miami-Miami Beach-Kendall, FL (Div.)	2,265	+331%
10	Indianapolis, IN (MSA)	2,128	+15%
11	Tampa-St. Petersburg-Clearwater, FL (MSA)	2,105	-32%
12	Baltimore-Towson, MD (MSA)	2,067	+7%
13	Fayetteville, NC (MSA)	1,967	+131%
14	Minneapolis-St. Paul-Bloomington, MN-WI (MSA)	1,921	+85%
15	Edison, N.J. (Div.)	1,811	+167%
16	Boston-Quincy, MA (Div.)	1,792	+13%
17	San Antonio, TX (MSA)	1,733	+242%
18	Little Rock-North Little Rock, AR (MSA)	1,715	+38%
19	Oakland-Fremont-Hayward, CA (Div.)	1,634	+137%
20	El Paso, TX (MSA)	1,588	+188%

Why do MF Builders need to Differentiate their Properties

A screenshot of the PR Newswire website. The top left features the PR Newswire logo with the tagline "United Business Media". The top right has a navigation menu with links: "Send a release", "Member sign in", "Become a member", "For journalists", and "Global sites". Below this is a horizontal menu with "Products & Services", "Knowledge Center", and "Browse News Releases". A link reads "See more news releases in: Banking & Financial Services, Real Estate, Surveys, Polls and Research". The main headline is "Apartments.com National Survey Reveals More Than 95 Percent of Renters Are Making a Move in 2010". Below the headline is a sub-headline "Moves Motivated by Better Bargains, Nicer Apartments and Safe Neighborhoods". The text below reads: "CHICAGO, Jan. 19 /PRNewswire/ – Many renters across the country are ringing in the New Year with a new apartment. According to a national survey conducted by Apartments.com—securing more than 1,500 renter responses—more than 95 percent of renters said they are planning a move in 2010. Striking while their 2010 moving resolutions are hot, many renters are also moving earlier this year, searching for better deals and nicer apartments in great neighborhoods."

What Renters Want?



APARTMENTS.COM NATIONAL SURVEY REVEALS RENTERS ARE GOING “GREEN” IN THEIR APARTMENTS

Nearly Seventy-Five Percent of Renters Recycle and Conserve Energy; Twenty-Five Percent Willing to Pay More Rent for Green Living

CHICAGO (April 15, 2009) – More than 60 percent of renters said they search for apartments that offer environmentally-friendly amenities and 25 percent are willing to pay more rent to live at an apartment community that considers the environment in their day-to-day community operations.

Source: Apartments.com

Green Premium



- A survey of 1,000 apartment seekers by Rent.com finds that 86 percent of the U.S. rental pool would prefer to live in a green apartment, and a full 42 percent would pay a \$100 rent premium to do so.

Source: MultifamilyExecutive.com, June 2010

Why Will Developers Engage?

- Preferred financing or permitting
- Local incentives or rebates
- Federal tax credits
- Faster lease-up and sales
- First step to achieving green building certifications
- Reduced building utility and maintenance bills
- 3rd party provides quality assurance



The Pilot

Program Pilot (2005 – 2010)



Pilot Analysis



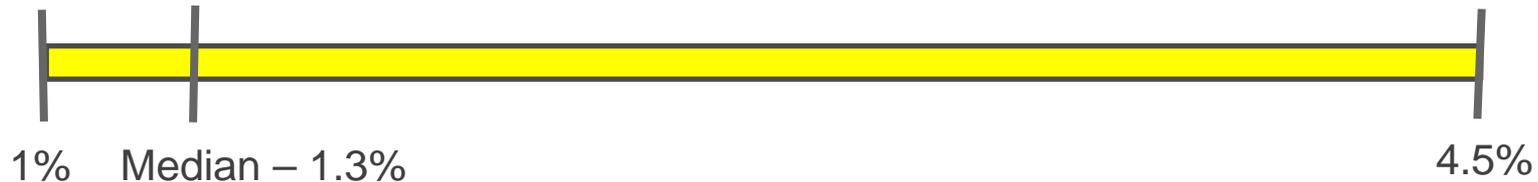
ENERGY STAR MRHR Pilot Metrics

Total # Units	1,872 (16)	Total Square Footage	1,998,000
Total Estimated Energy Saved (MMBtu/yr)	37,100	Total Estimated Electricity Saved (kWh/yr)	6,013,500
Total Estimated Electricity Saved (kWh/yr)	6,013,500	Total Estimated Natural Gas (Therms/yr)	136,700

Performance Target (% above Baseline)



Incremental Cost as a Percentage of Development Cost



Pilot Analysis



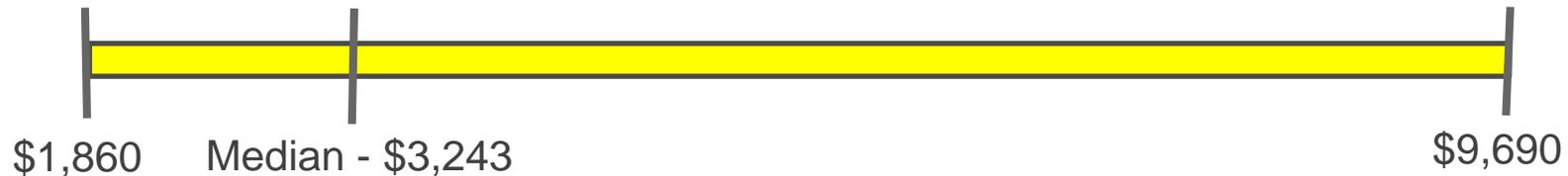
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Estimated Savings Per Unit (\$/yr)



Incremental Cost Per unit



Pilot Analysis



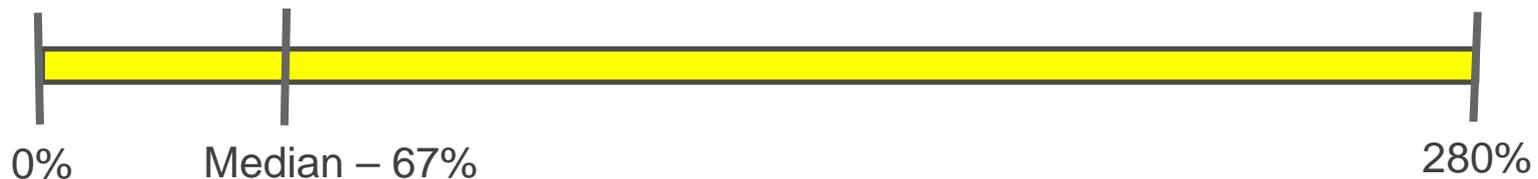
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Incremental Cost Per Square Foot (\$/ft²)



Return on Investment over 15 Years



Webinar Series



- Training webinars
 - Program requirements and reporting
 - Modeling
 - Verification

The ENERGY STAR MFHR documents will be available at www.energystar.gov/mfhr in late May

More Information



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