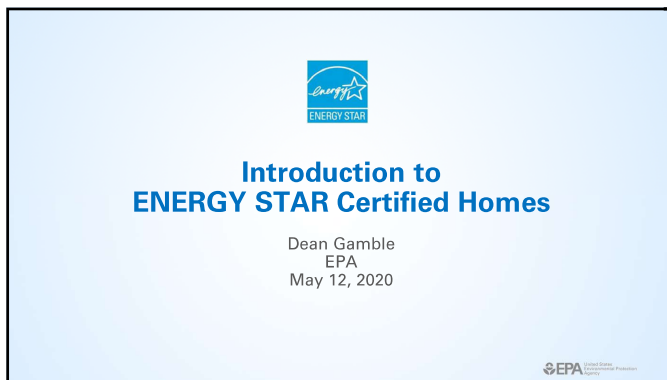


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For more than 20 years, EPA's **ENERGY STAR** program has identified the most energy efficient **products**, **buildings**, **plants**, and **new homes** – all based on the latest government-backed standards and a rigorous third-party certification process.




EPA | ENERGY STAR. The simple choice for energy efficiency.

4

ENERGY STAR. The simple choice for energy efficiency.




Today, this little blue label does all the hard work of certifying outstanding energy efficiency in:



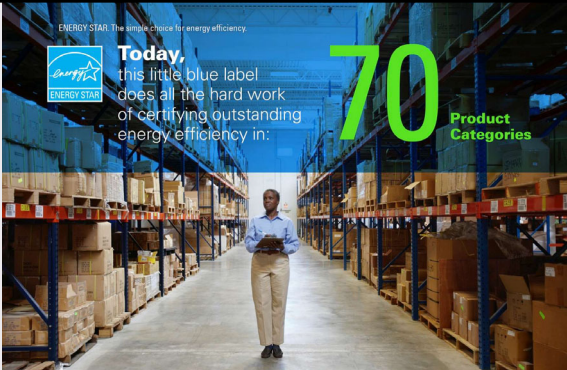
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ENERGY STAR. The simple choice for energy efficiency.



Today, this little blue label does all the hard work of certifying outstanding energy efficiency in:

70 Product Categories



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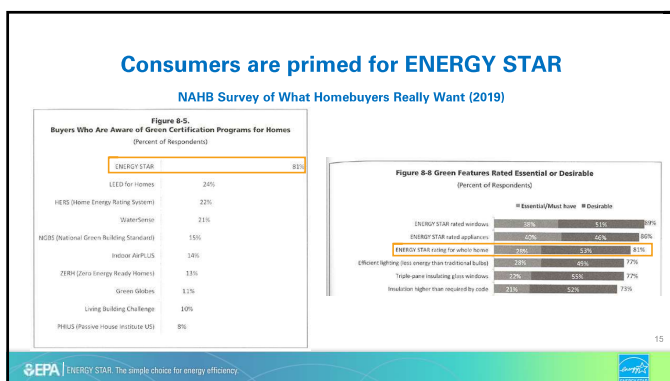
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Participation in Pennsylvania

- Over 25,000 homes certified to date.
- Close to 1,250 homes certified last year alone.
- Over 100 partners are participating in the program. Small sample of builders/developers:

Avalon Bay	Commodore Homes
Common Ground	NVR-Ryan
K. Hovnanian	Habitat for Humanity
Colony Factory Crafted Homes	Alden Homes at Cornwall Inc.
Tern Construction & Development	Libolt & Sons, Inc.
Pleasant Valley Modular Homes	Blue Rock Construction, LLC

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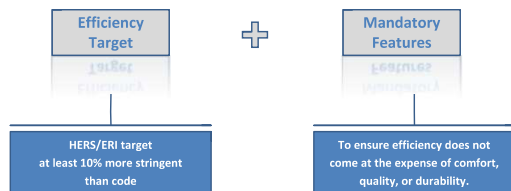
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Key Components of ENERGY STAR Certified Homes



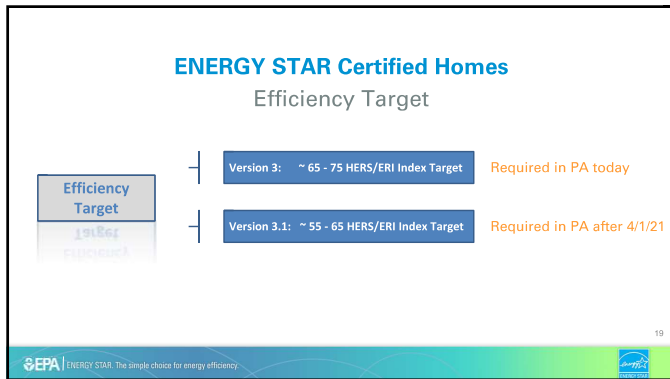
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Two Key Components to ENERGY STAR Certified Homes

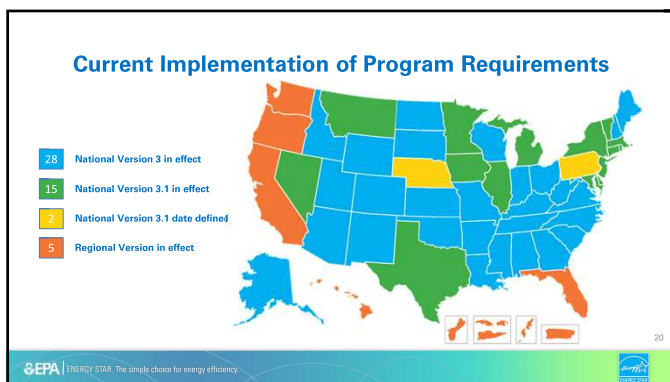


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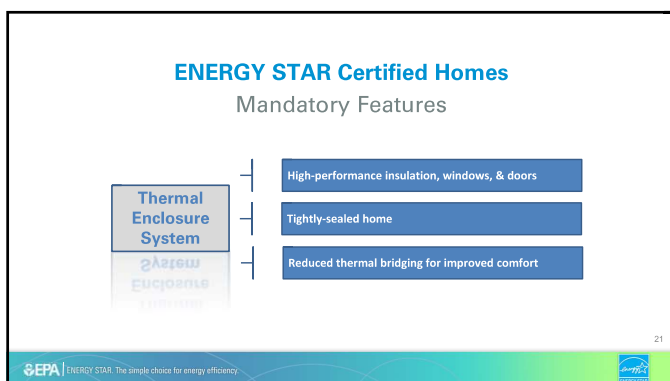
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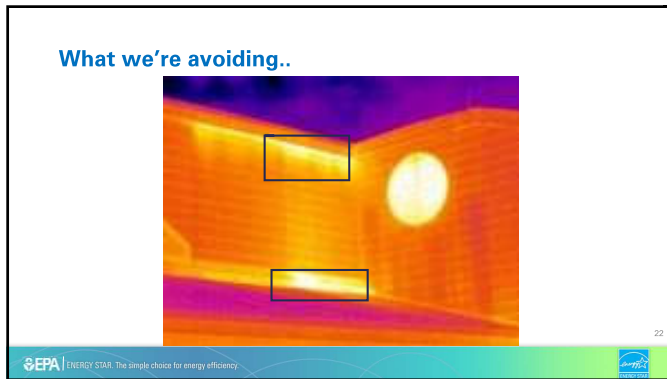
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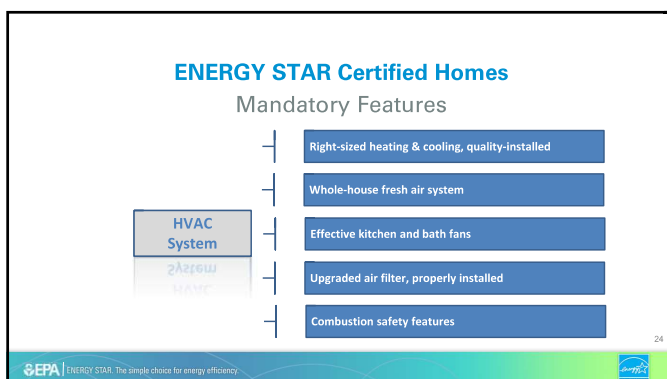
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What we're avoiding..




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What we're avoiding..



No filter access panel is installed. Air can bypass the filter by travelling around it, reducing the effectiveness of the filter.



Gasket included on filter access panel to prevent bypass

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ENERGY STAR Certified Homes

Mandatory Features

Water Management System

Water-managed roof

Water-managed walls

Water-managed foundation and site

Water-managed building materials

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What we're avoiding..



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Typical ENERGY STAR Certification Process Today



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Process for Builders

1. Design stage:
 - Develop house plans and options.
 - Provide to the HVAC contractor and Rater.
2.
 - Work with Rater to select efficiency features to meet ENERGY STAR HERS/ERI Target.
 - HVAC designer completes their design work.
3. Construction stage:
 - Build the home.
 - Throughout, Rater & HVAC contractor complete their tasks.
 - Builder meets Water Management System requirements.
4. When all requirements are complete, Rater will certify the home.

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Process for HVAC Designers

1. Obtain plan, options, and efficiency features from builder or Rater.
2. Decide whether to do a site-specific design or group design.
3.
 - Design the ventilation system,
 - Perform room-by-room load calculations,
 - Select the equipment, and,
 - Design the duct system.
4.
 - Complete the HVAC Design Report for each system design.
 - Provide it to the builder or HVAC contractor, and to the Rater, once per system design.

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Process for HVAC Commissioning Contractors

1. Become a credentialed contractor.
2. Obtain the HVAC Design Report from designer for the system that you will be commissioning.
3.

After system start-up, commission the system and complete the HVAC Commissioning Checklist for three key tasks:

 - **Required:** Check refrigerant charge
 - **Required:** Check HVAC fan airflow
 - **Recommended:** Test and balance room-by-room airflows

Retain completed checklist in-house, unless the builder, Rater, or HVAC oversight organization requests it.

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Process for Raters

1. Design stage:
 - Complete energy modeling
 - Collect the HVAC Design Report from HVAC Designer
 - Complete the Rater Design Review Checklist
2. Construction stage:
 - Complete the Rater Field Checklist
 - Permitted, but not required, to collect HVAC Commissioning Checklist
 - Not required to collect Water Management System documents

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Value for builders

- Greater quality and process control.
- Reduced costs from warranty issues & customer complaints.
- Maximum value for money invested.

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Value for HVAC professionals

- Reduced callbacks for comfort issues.
- Justification to invest in higher-value products and services.

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Value for homeowners

- Lower utility bills and lower cost of ownership.
- Better comfort, durability, and quality.
- A more livable home.

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Incremental cost from code to ENERGY STAR

- Full incremental cost from baseline code:
 - Version 3: ~\$2,000
 - Version 3.1: ~\$1,100
- However, most ENERGY STAR builders aren't starting from baseline code.
- Incremental cost from typical construction practices of our builders: ~\$350-500.

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Using ENERGY STAR to Meet Code



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Overlap between ENERGY STAR & code

- Factsheets available at:
www.energystar.gov/newhomesguidance
- One page front and back
- Created for:
 - Version 3 vs the 2009 IECC
 - Version 3.1 vs the 2012 IECC
 - Version 3.1 vs the 2015 IECC

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Overlap between ENERGY STAR & code

• Front page:

- What is an ENERGY STAR Certified Home?
- How does ENERGY STAR intersect with code?
- How can a Code Official use this information?

2015 IECC states that “the code official, shall be permitted to deem a national, energy efficiency program to exceed the energy efficiency required by this code.

Buildings approved in writing by such an energy efficiency program shall be considered in compliance with this code. The requirements identified as ‘mandatory’ in Ch. 4 shall be met.”



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Overlap between ENERGY STAR & code

- Back page lists mandatory code requirements and explains how ENERGY STAR helps satisfy them:

Code Section	Overview of Code Requirement	Commentary
The ENERGY STAR Certified Homes (ESCH) program partially or fully satisfies all of the following mandatory code requirements.		
Labeling		
401.3	Certificates with key efficiency features posted at electrical panel.	ESCH program mandates that a label be affixed to the panel. The code required label can be easily generated and applied at the same time.
Building Thermal Envelope		
402.4.1.1	Building thermal envelope durably sealed to limit infiltration.	ESCH program mandates sealing at all code locations except site-built fenestration and rim joist junctions.
402.4.1.2	Air sealing of building demonstrated through blower door test.	ESCH program satisfies this requirement if blower door test results in infiltration ≤ 5 ACH50 in C2s 1 and 2 and ≤ 3 ACH50 in C2s 3-8.
402.4.4	Where ducts provide air to open combustion appliances, duct openings and appliances located outside thermal envelope or in thermally isolated rooms in C2s 3-8.	ESCH program satisfies this requirement in C2 4-8.
402.4.5	Recessed luminaires ICAT rated and installed with gasket.	ESCH program satisfies this requirement.
402.5	Area-weighted fenestration performance meet code limits.	ESCH program satisfies this requirement.

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Utility Programs for PA Residential New Construction

FirstEnergy Energy Efficient New Homes Program	ppl PPL Electric Utilities PPL New Homes Program	PECO PPL Electric Utilities PECO New Home Rebates	UGI SAVE SMART New Homes	PGW EnergySense Rebates & Grants
Eligible Projects: <ul style="list-style-type: none"> Single-family detached Single-family attached Modular homes Multifamily buildings (individually metered - five stories or less) Manufactured Homes 	Eligible Projects: <ul style="list-style-type: none"> Single-family detached Single-family attached Modular homes Multifamily buildings (individually metered - five stories or less) 	Eligible Projects: <ul style="list-style-type: none"> Single-family detached Single-family attached Modular homes Multifamily buildings (individually metered - five stories or less) 	Eligible Projects: <ul style="list-style-type: none"> Single-family detached Single-family attached Modular homes Multifamily buildings (individually metered - five stories or less) 	Eligible Projects: <ul style="list-style-type: none"> Single-family or duplex properties Multifamily buildings

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FirstEnergy Energy Efficient New Homes Program

FirstEnergy
Met-Ed • Penelec • Penn Power • West Penn Power

<https://energy.savespawhomen.com>

Zach Ambrose
zambrose@psdconsulting.com

- Financial incentives are available for builders of new homes serviced by Met-Ed, Penelec, Penn Power and West Penn Power.

REQUIREMENT	INCENTIVES
≥15% above 2009 IECC code	30¢ per kWh
≥15% above 2009 IECC code + ENERGY STAR V2.0 certification	35¢ per kWh

- New homes must achieve modeled energy savings of 15% over the 2009 International Energy Conservation Code* to qualify.
- Additional incentives are available for homes that are ENERGY STAR® certified.
- Typical per home incentive is ~\$700-900.

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PPL New Homes Program

ppl
PPL Electric Utilities

<https://ppl electricnewhomes.com>

Andrew Dieck
adieck@psdconsulting.com

- Financial incentives are available for builders of new homes serviced by PPL Electric Utilities.

REQUIREMENT	INCENTIVES
HERS Rating + 15% above code What is HERS?	30¢ per kWh
HERS Rating + 15% above code + ENERGY STAR® Home	35¢ per kWh

- With rebates of 30-35¢ per kWh, builders who save 15 percent or more in energy use over code can earn up to \$2,500, depending on the home.
- Typical per home incentive is ~\$700-900.

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PECO New Home Rebates



<https://peconewhohomes.com>

Andrew Dieck
adieck@psdconsulting.com

- Financial incentives are available for builders of new homes serviced by PECO.

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

- With rebates of 25-30¢ per kWh, builders who save 30 percent or more in energy use over code can earn up to \$750, depending on the home, and up to \$1,750 for ENERGY STAR homes.
- Typical per home incentive is ~\$700-900.

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UGI Save Smart New Homes



<https://ugisavesmart.com/newhomes>

Tammy Lee
tlee@psdconsulting.com

- Financial incentives are available for builders of new homes serviced by UGI South or UGI North.

TIER LEVELS	ELIGIBILITY REQUIREMENTS	INCENTIVE TO BUILDER	INCENTIVE CAP
Tier 1: Code Plus	HERS Rating + 30% savings over code	\$20 per MMBtu	Uncapped
Tier 2: ENERGY STAR 3.0	HERS Rating + ENERGY STAR certification + 30% savings over code	\$30 per MMBtu	Uncapped

- With rebates of \$20-30 per MMBtu, builders who save 30 percent or more in energy use over code will earn rebates for every MMBtu saved.
- Typical per home incentive is ~\$1,000.

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PGW EnergySense Rebates & Grants – Residential Grants



<https://pgwenerysense.com>

Chris Hurwitz
churwitz@psdconsulting.com

- Financial incentives are available for builders of new homes serviced by PGW.

- Up to \$750 for homes built to conserve gas at 20% or more above code.

Residential-sized Equipment Rebates		
Equipment Type	First Unit in Building	Additional Units in Building
94% AFUE Furnace	\$500	\$250
94% AFUE Boiler	\$1,500	\$800

All products must have an Efficiency Level (AFUE) of 94% or greater

- Receive up to \$500 or \$1,500 for 94% AFUE furnaces and boilers, respectively.

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PGW EnergySense Rebates & Grants – Commercial Grants



- Financial incentives are available for builders of larger multifamily projects serviced by PGW.

<https://pgwenergysense.com>

Chris Hurwitz
churwitz@psdconsulting.com

Energy Savings Above Code	Grant Amounts Per First-Year MMBtu Saved
≥ 15% to < 20%	\$13
≥ 20% to < 30%	\$24
≥ 30%	\$40

- Up to \$60,000 per project saving at least 15% or more above code.
- Based on energy modeling and full set of building plans.

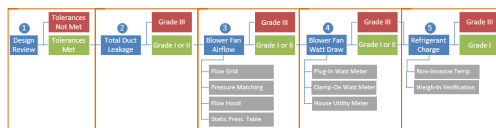
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How HVAC Grading Will Improve ENERGY STAR

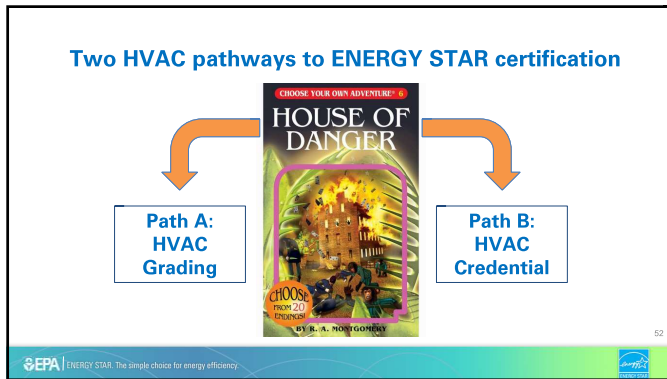
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Std. 310: Standard for Grading the Installation of HVAC Systems



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Key Benefits of HVAC Grading Path

1. Does not require use of credentialed contractor.
2. Rewards properly installed HVAC equipment with ERI / HERS points.
3. Integrates most ENERGY STAR HVAC requirements into a standard rating.

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How to Get Started

1. Find a rater at: www.energystar.gov/partnerlocator

New Homes Partners and Incentives in Pennsylvania

Program Requirements in Pennsylvania: [Click here for details](#)

- All new construction (ENR) must be certified by a qualified rater.
- All new construction (ENR) must be certified by a qualified rater.
- All new construction (ENR) must be certified by a qualified rater.
- All new construction (ENR) must be certified by a qualified rater.

State Incentives for New Homes: [Click here for details](#)

- Rebate up to \$1,000 per unit for ENERGY STAR certified homes.
- Rebate up to \$1,000 per unit for ENERGY STAR certified homes.
- Rebate up to \$1,000 per unit for ENERGY STAR certified homes.
- Rebate up to \$1,000 per unit for ENERGY STAR certified homes.

[Back to National Search](#) [Expand All](#) [Collapse All](#)

Find Builders in Pennsylvania

Find Incentives in Pennsylvania

Find Raters in Pennsylvania

City	County	Address	Phone	Website	Rating	Years in Business	Projects Completed	Projects Underway	Projects On Hold	Projects Cancelled	Projects Pending	Projects Completed	Projects Underway	Projects On Hold	Projects Cancelled	Projects Pending
Philadelphia	Philadelphia	1000 Locust St.	215-597-1000	www.energystar.gov	5.0	10	10	0	0	0	0	10	0	0	0	0
Philadelphia	Philadelphia	1000 Locust St.	215-597-1000	www.energystar.gov	5.0	10	10	0	0	0	0	10	0	0	0	0
Philadelphia	Philadelphia	1000 Locust St.	215-597-1000	www.energystar.gov	5.0	10	10	0	0	0	0	10	0	0	0	0

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How to Get Started

2. Work with Rater to model your homes to see how close you are to hitting the ENERGY STAR HERS / ERI target and if you're already including some of the big mandatory features:
 - A. Whole-home fresh air system
 - B. Kitchen exhaust to the outside
 - C. Total duct leakage testing
 - D. Any type of HVAC design review and/or install commissioning
 - E. ≥ 70 CFM rated bath fans in full baths (to achieve ≥ 50 CFM in field)
 - F. Bedroom pressure balancing

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How to Get Started

3. Review all partnership requirements and complete the partnership agreement at: www.energystar.gov/partner_resources/residential_new/working

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ENERGY STAR Certified Homes

<p>Web & Email:</p> <p>Main: energystar.gov/newhomespartners Technical: energystar.gov/newhomesrequirements Training: energystar.gov/newhomestraining HVAC: energystar.gov/newhomesHVAC Email: energystarhomes@energystar.gov</p>	<p>Social Media:</p> <p> @energystarhomes  facebook.com/energystar</p>
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Contacts:
Dean Gamble
 EPA
 Technical Manager
 ENERGY STAR Certified Homes
gamble.dean@epa.gov






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**Introduction to ENERGY STAR for
New Homes in PA**

www.phrc.psu.edu

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