



New ENERGY STAR Multifamily Program & What it means for Low-Rise Builders

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Agenda

- Review of the CURRENT Multifamily programs
- Specification development timeline
- Overview of the new **MFNC** program
 - Eligibility
 - Certification Paths:
 - ERI, ASHRAE, Prescriptive
 - Mandatory Requirements:
 - In-unit & Common area items
 - Verification & Oversight
 - Partnership and Training Requirements
 - Labels, Website, & Next Steps





ENERGY STAR Multifamily New Construction Programs (current)

Guidelines that apply to new or gut rehab:

- Single Family Homes
 - Factory Built Homes
 - Low Rise Multifamily Buildings
- } Certified Homes
- Mid and High Rise Multifamily Buildings
 - Covers buildings previously ineligible for Certified Homes
 - Launched in June 2011
- } MFHR

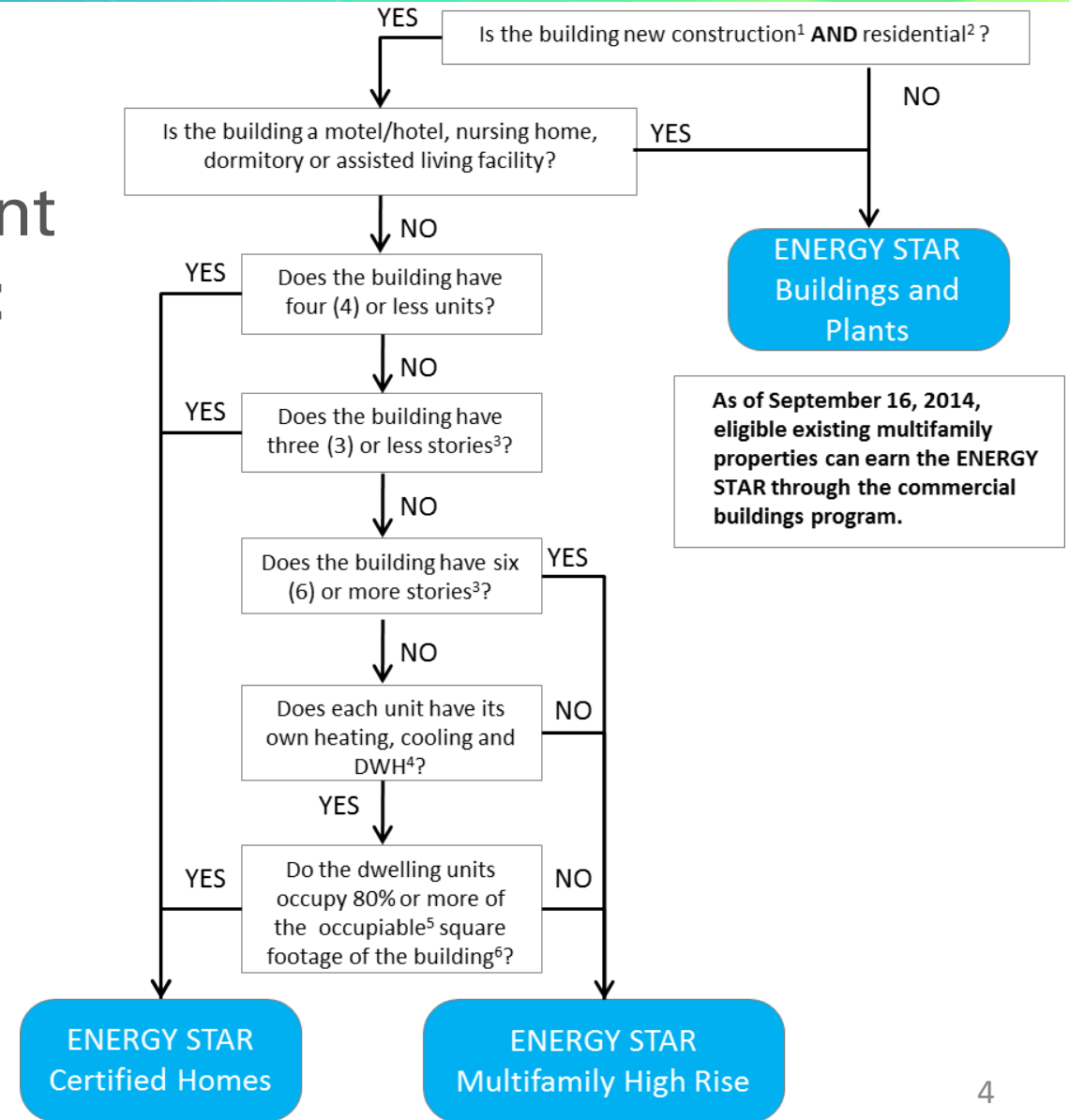




Eligibility (current)

Complex, rigid line, with significant programmatic differences causes:

- Confusion/Frustration
- Inconsistency with code/incentive program eligibilities
- Designing to program, instead of what's best for the building
- Requirements not optimized for project







Goals for the New Multifamily Program

- Appropriate eligibility
- Technical requirements governed by building features, not by height
- Common areas addressed
- Flexibility for participants and program administrators
- Well-defined verifier requirements
 - Including multifamily training
- Market-based oversight



ENERGY STAR MFNC Specification Development Timeline

- **October 2016:** Presented concept at Stakeholder meeting
- **February 2017:** Presented concept at RESNET Conference in Arizona
- **Nov/December 2017:** Webinar on draft requirements, 1st comment period & subsequent revisions
- **Spring 2018:** Webinar on updated technical requirements, 2nd comment period & more revisions
- **June 2018:** 3rd (and final) comment period & final revisions



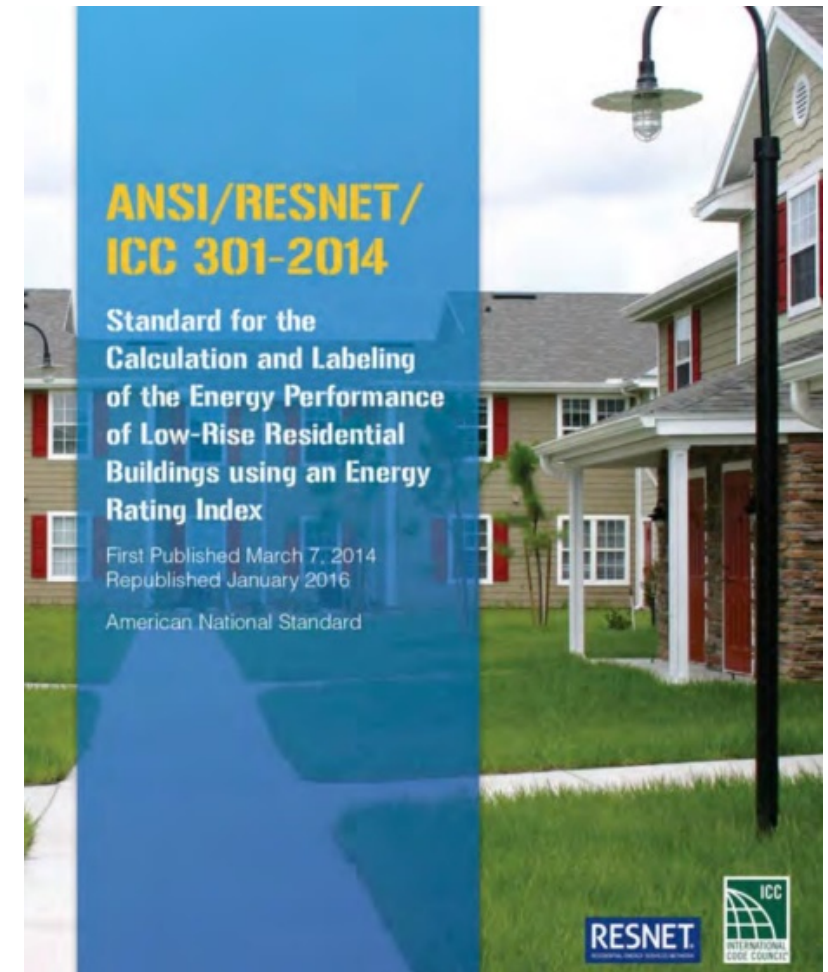
ENERGY STAR MFNC Implementation Timeline

- Post final documents and launch website by late Fall
- MFNC webinar on November 28th
- Final specification available for use January 1, 2019
 - A building that complies with all MFNC requirements, regardless of building permit date, can be certified
- Specification required for buildings with permit dates January 1, 2021 and later
 - Consider length of design development in choice



Concurrent ANSI Standard Development

- ANSI/RESNET/ICC 301-2014 governs how energy ratings are performed
- Currently allows energy ratings on units in multifamily buildings UP to 3 stories
- No specific accommodations for multifamily units/systems





Concurrent ANSI Standard Development

Standards Development Timeline

- **2013:** EPA chairs MFWG to create MF Guidelines; published in 2014
- **2016-7:** RESNET MF Committee works to turn those into a Standard
- **October 2018:** ANSI 301-2019 starts 3rd round of public comment
- **Will allow energy ratings on units in any height building**

Implementation Timeline

- **January 2019:** Anticipated publication
- **July 2019:** Anticipated 'adoption' by RESNET
- **January 2020:** Required for energy ratings (based on bldg. permit)



The NEW Multifamily New Construction Program



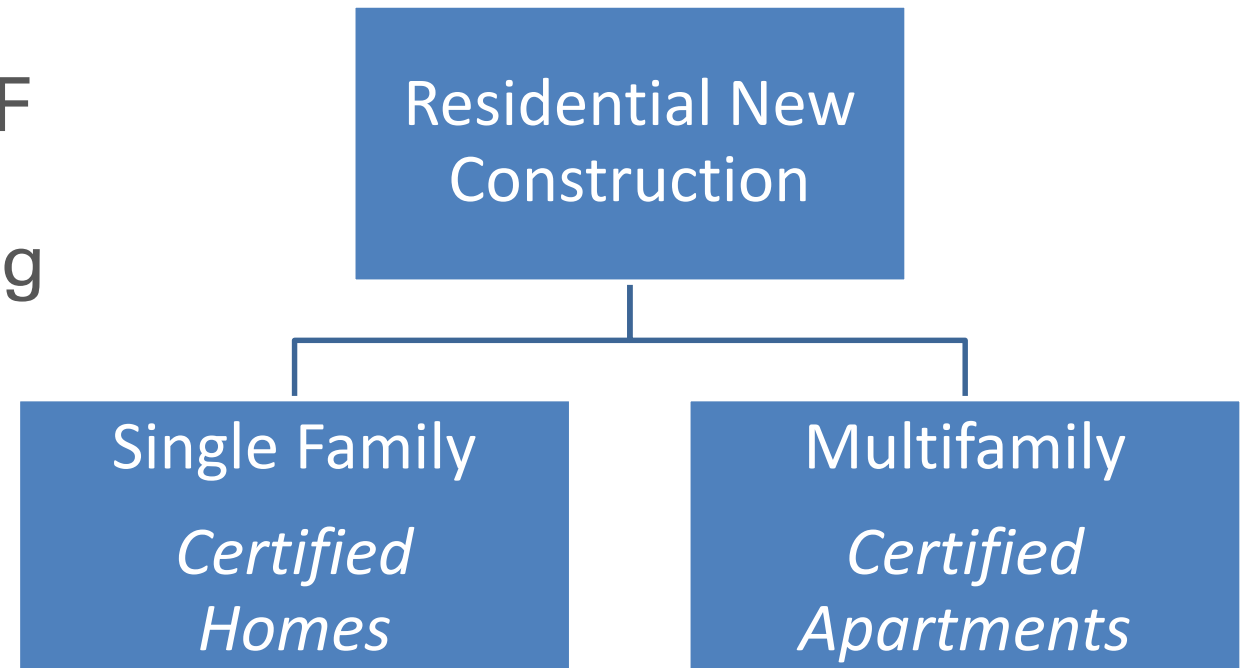
New Premise

Delineation between SF and MF

One MF program for all building heights with common space requirements

Single-Family:

- Detached homes
- Two-family dwellings
- Townhomes (IRC definition)

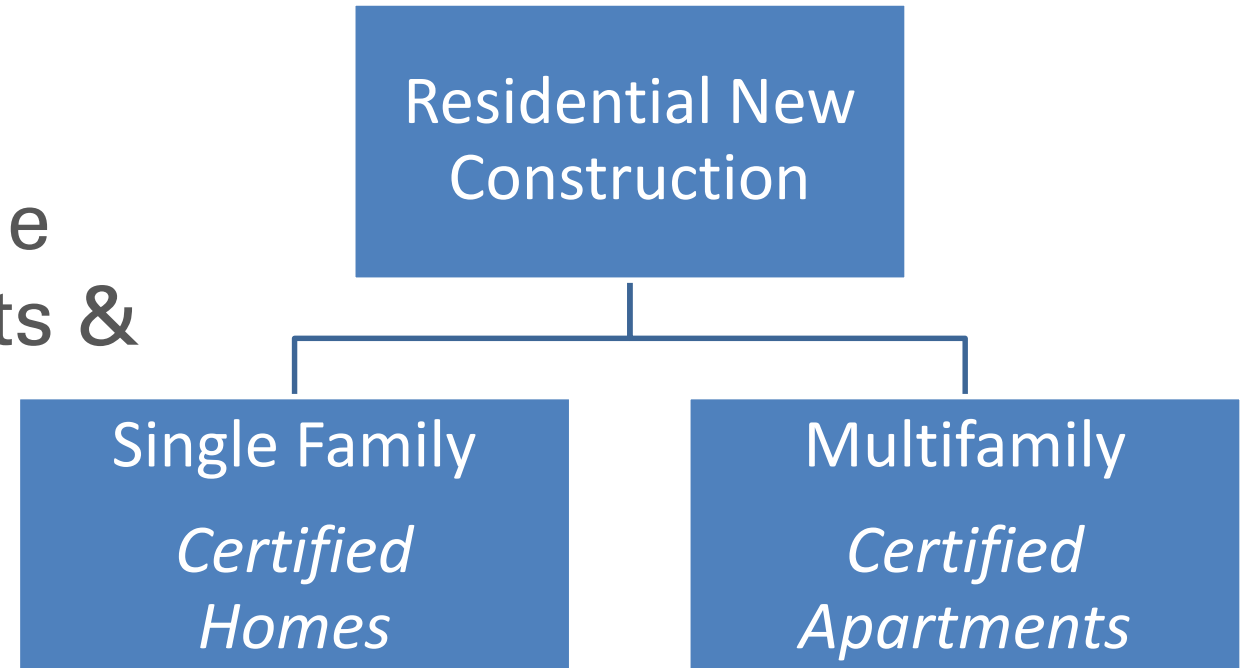




New Premise

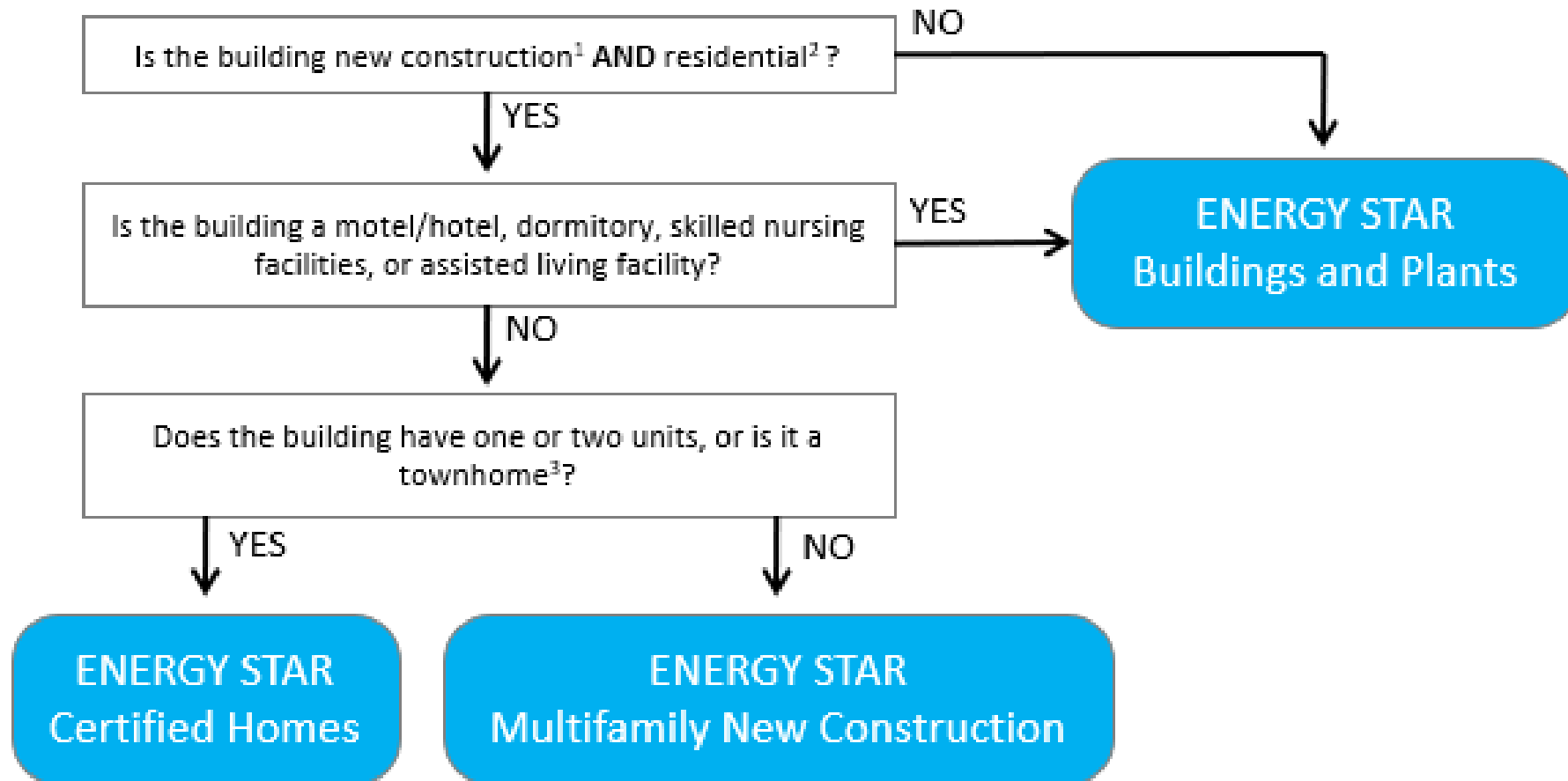
Multifamily:

- Townhomes too, with some revised/added requirements & SF Reference design
- Mixed use, if residential is more than 50%
- Most other attached housing
 - Not hotels, dorms, skilled nursing, or assisted living





New eligibility tree



Building Types Eligible for New ENERGY STAR MFNC Program

What about a duplex or 1-over-1?

- Certified Homes

What about Townhomes?

- Certified Homes or MFNC*

What about garden style?

- Multifamily New Construction

What if it just has 3 or 4 units?

- Multifamily New Construction

What about 3, 4, or 5 story with in-unit systems that once did Certified Homes?

- Multifamily New Construction

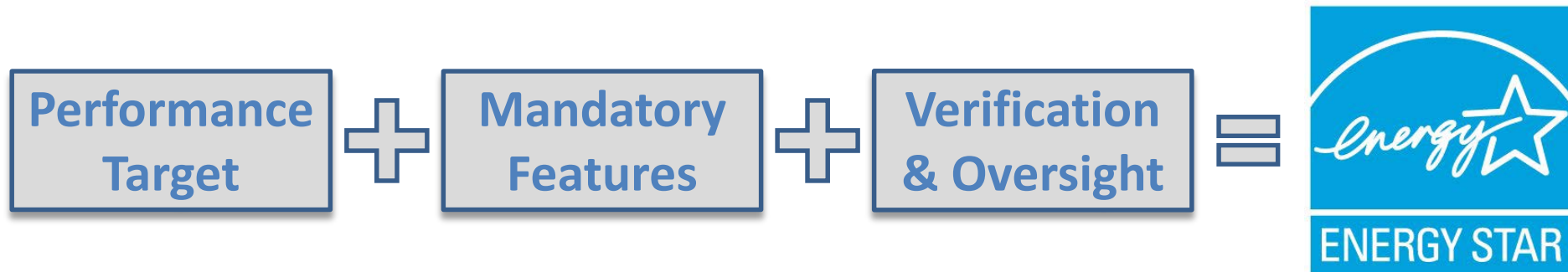




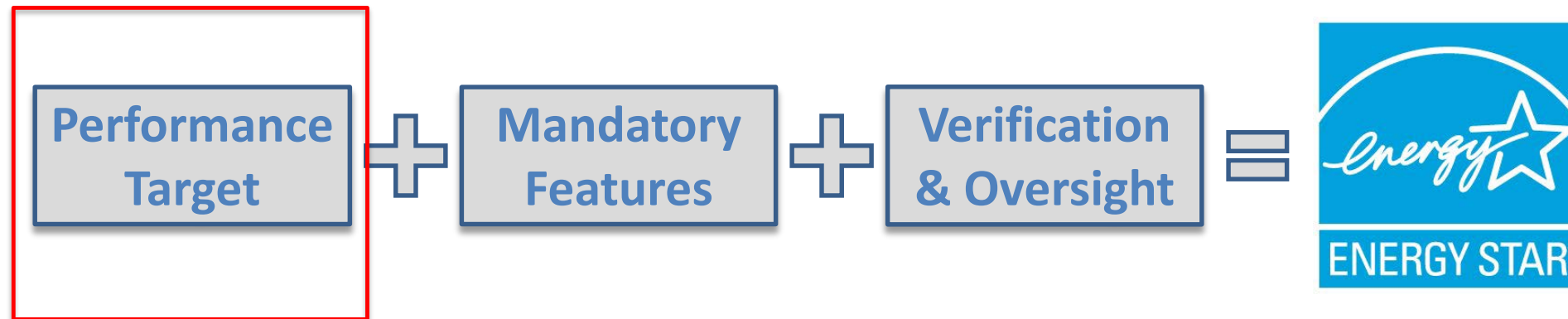
Overview of the New Multifamily New Construction Program Requirements



Key Components to Program Requirements

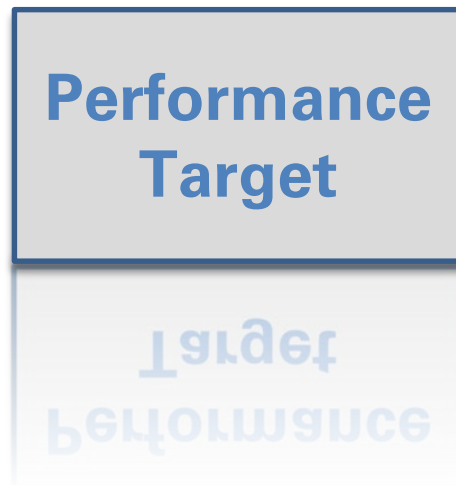


Key Components to Program Requirements





ASHRAE Path



Whole-Building Modeled Energy Savings

- 15% above ASHRAE 90.1 (the year is based on the state code)
- 10% above Title 24-2016 in California

Notes

- Low-rise projects follow same modeling rules except have wood-framed baseline



Prescriptive Path



- No energy modeling
- Available for all projects (except CA)
- ENERGY STAR Multifamily Reference Design specifications is required (in-unit and common areas)
- Additional req'ts beyond ENERGY STAR Multifamily Reference Design (e.g. in-unit lighting power density, building level window-to-wall ratio)

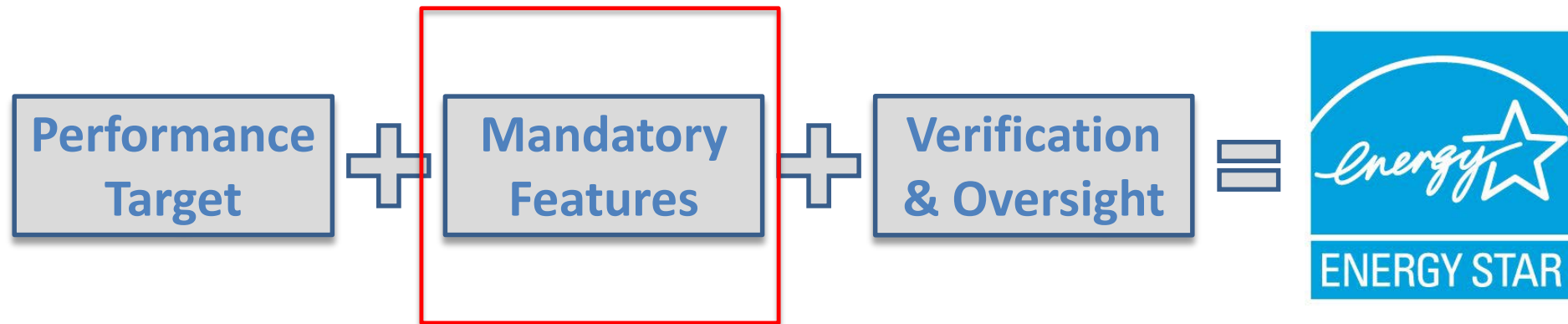


Energy Rating Index (ERI) Path



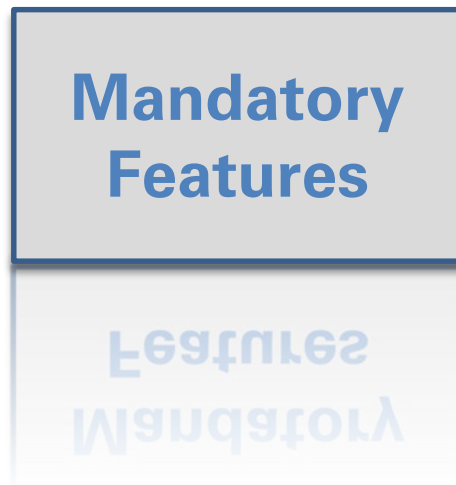
- ENERGY STAR Multifamily Reference Design
 - Version “1” and “1.1” to match Version “3” and “3.1” states based on Certified Homes Reference Design (generally modeling more stringent)
 - Also developed regional “1.2” for OR & WA
 - Not used for Townhomes!!!
- Available for units in any height bldg, but timing delayed until ANSI 301-2019 adopted
- Prescriptive common area measures₂₁

Key Components to Program Requirements





Checklist Item/Prerequisite Summary



- Developed by evaluating req'ts from ESCH & MFHR and combining/adjusting as appropriate (both more and less stringent)
- Added req'ts for central HVAC & HW systems
- Added req'ts in common areas
- Added req'ts to reduce hot water energy use
- Similar Checklist format as Certified Homes-Rater Design, Rater Field, HVAC Design Report, HVAC Functional Testing, Water Management

Example: 3 story multifamily, ERI Path

What are the major changes from Certified Homes?





MFNC Rater Design & Field Checklists

What's different from Certified Homes?

- Two separate PDF checklists, also available in Excel
- Licensed professional can verify some of the new items

Thermal Enclosure (Sections 1-4)

- Fenestration & Insulation for dwelling units & common spaces (based on commercial code)
- Minimum insulation req'ts for projected balconies, elevated podiums, heated plenums, heated garages
- Compartmentalization test requirement: 0.30 cfm50/ft² of enclosure area (~6 ACH50 per dwelling unit)



MFNC Rater Design & Field Checklists (continued)

What's different from Certified Homes?

HVAC System & Duct Quality Installation (Sections 5-10)

- Bedrooms \geq 150 cfm, pressure balanced (-5 Pa to 5 Pa)
- Added Central Exhaust Duct Leakage test and HVAC Equipment Control & Hydronic Distribution req'ts (similar to code/MFHR requirements)
- DLTO still required for Townhomes; Total DL for others (exempt if in conditioned space with less than 10ft supply)
- Lower leakage allowance if returns are NOT ducted



MFNC Rater Design & Field Checklists (continued)

What's different from Certified Homes?

NEW Sections 11-14

- Domestic Hot Water req'ts (heat traps on in-unit storage, inspect R-3 on piping, Rater-measured HW temperature)
- Common Area Lighting Power Density Maximums (W/ft^2), efficient fixtures/bulbs, automatic lighting controls
- Whole Building Energy Data Acquisition Strategy (buildings $> 50,000 \text{ ft}^2$)
 - Lease agreements, monitors, utility aggregated data



MFNC HVAC Design Report

What's different from Certified Homes?

- One HVAC design report per building, instead of per system
- Design common areas to ASHRAE 62.1 (units to 62.2)
- Report common area heating & cooling loads and equipment selection
- Room-by-room load calcs required for Townhomes, but unit-level for other MF
- New inputs/ranges on dwelling unit load calcs (ie. internal gains, infiltration)
- Items to be verified by Rater, shown on Design Report



MFNC HVAC “Functional Testing” Checklists

What’s different from Certified Homes?

- Not ‘Commissioning’....it’s ‘Functional Testing’
- Credentials to be able to fill out Functional Testing Checklist include, but are not limited to H-QUITO Credentialed Contractor
- **New** Section 5 covers ALL dwelling unit systems, but Rater can verify these items
- **New** Sections 6-9 cover central VRF heat pumps, boilers, chillers, pumps



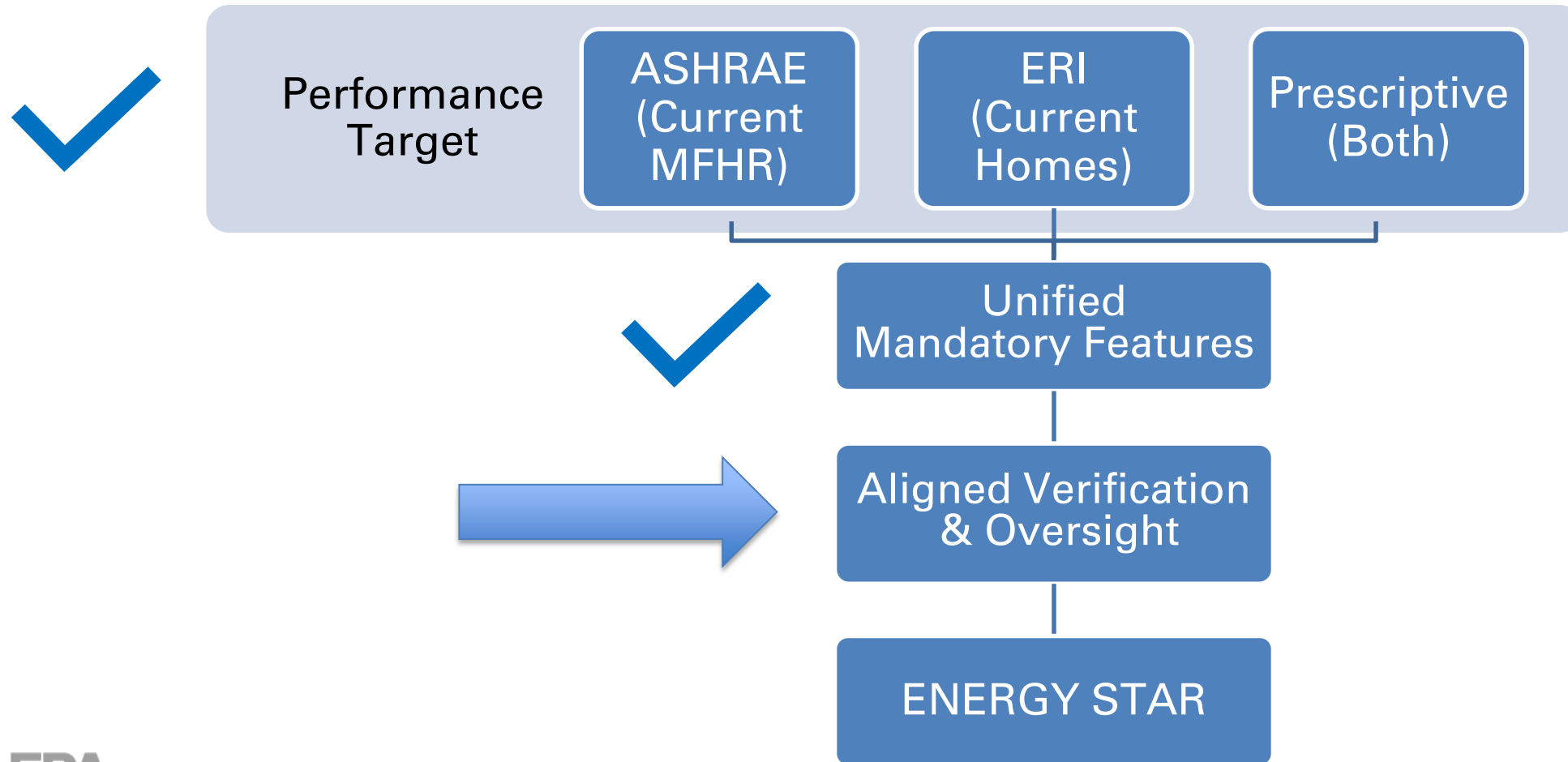
MFNC Water Management System Requirements

What's different from Certified Homes?

- Kept the Water Management System Builder Requirements from Certified Homes program
 - Applies to the building/project
 - Exemption for capillary break under open or ventilated garage slabs
 - New for MFHR projects



Multifamily New Construction Requirements Overview





Verifiers and Oversight Organizations

Verification and Oversight

- Different Oversight Organizations for different pathways
 - ERI Path:
 - Verification Oversight Organization (VOO)
 - ASHRAE and Prescriptive Paths:
 - Multifamily Review Organization (MRO)



Partners and Training

ENERGY STAR Partners

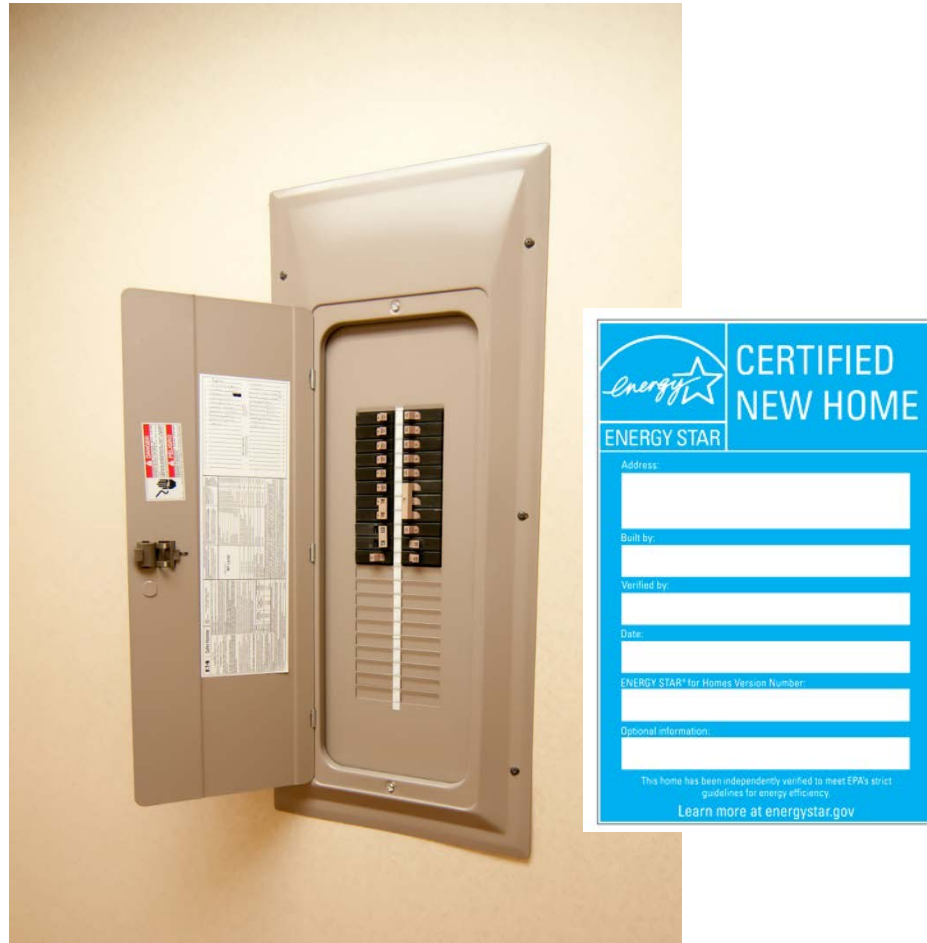
- Builders & Developers (online orientation being updated)
- Raters (MFNC training being developed)
 - Need to complete in order to certify units as of 1/1/2020
 - Similar format as current Certified Homes Rater training

Other program participants

- Functional Testing Agents & ASHRAE modelers
 - Prior to certification, they will need to complete the online video and appear online in the directory



Labeling (required)



Labeling (optional)





Multifamily New Construction Program Website



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ENERGY STAR CERTIFIED HOMES PROGRAM REQUIREMENTS

SITE BUILT & MODULAR MANUFACTURED UNDERGOING GUT REHAB

PROGRAM VERSIONS AT A GLANCE

Select State or Territory

PROGRAM REQUIREMENTS

National Program Requirements
National Program Requirements Version 3 (PDF, 216 KB)
National Program Requirements Version 2.1 (PDF, 228 KB)

Regional Program Requirements
Tropics Program Requirements Version 3 (PDF, 233 KB)
California Program Requirements Version 3.1 (PDF, 134 KB)
Florida Program Requirements Version 3.1 (PDF, 196 KB)
California Program Requirements Version 3.2 (PDF, 134 KB)
Oregon and Washington Program Requirements Version 3.2 (PDF, 204 KB)

Mandatory Measures
National Rater Design Review Checklist (PDF, 634 KB)
National Rater Field Checklist (PDF, 508 KB)
Tropics Rater Design Review Checklist (PDF, 212 KB)
Tropics Rater Field Checklist (PDF, 273 KB)
National HVAC Design Report (PDF, 252 KB)
National HVAC Commissioning Checklist (PDF, 184 KB)
National Water Management System Builder Requirements (PDF, 193 KB)

IMPLEMENTATION TIMELINE

Program Requirements	State/Territory	Applicable to Homes Permitted On or After the Following Date
National Version 3	AL, AK, AZ, AR, CO, GA, IN, ID, KS,	

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ENERGY STAR CERTIFIED HOMES PROGRAM REQUIREMENTS

SITE BUILT & MODULAR MANUFACTURED UNDERGOING GUT REHAB

APACHE, AZ AT A GLANCE

< Back to National view

Select a County

PROGRAM REQUIREMENTS

National Program Requirements Version 3 (PDF, 216 KB)
National Rater Design Review Checklist (PDF, 183 KB)
National Rater Field Checklist (PDF, 496 KB)
National HVAC Design Report (PDF, 311 KB)
National HVAC Commissioning Checklist (PDF, 184 KB)
National Water Management System Builder Requirements (PDF, 193 KB)

ADDITIONAL RESOURCES

ENERGY STAR Policy Record
ENERGY STAR Training & Education
Building America Solutions Center
National Version 3 Cost & Savings Document (PDF, 2.2 MB)
National Version 3 ENERGY STAR Reference Design (PDF, 218 KB)

IMPLEMENTATION TIMELINE

Homes in Arizona must be certified using the National Program Requirements Version 3 (PDF, 216 KB) if permitted on or after 07/01/2012.

COUNTY-LEVEL DESIGN TEMPERATURE LIMITS

Below are the heating and cooling design temperature limits for the selected state and country. These limits generally must not be exceeded in the HVAC design for a home that will be certified in this location. See the [Design Temperature Limit Reference Guide](#) for exceptions and details.



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SITE BUILT & MODULAR

MANUFACTURED

UNDERGOING GUT REHAB

PROGRAM VERSIONS AT A GLANCE

Select State or Territory



PROGRAM REQUIREMENTS

National Program Requirements

[National Program Requirements Version 3](#)
(PDF, 210 KB)



The simple choice for energy efficiency.

ENERGY EFFICIENT products

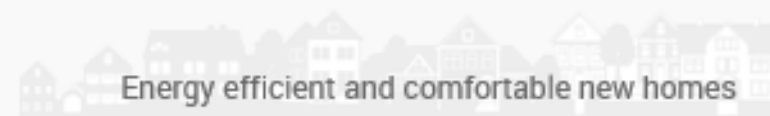
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ENERGY STAR CERTIFIED HOMES & APARTMENTS PROGRAM REQUIREMENTS

- SINGLE FAMILY
- MULTIFAMILY
- MODULAR
- MANUFACTURED
- UNDERGOING GUT REHAB

PROGRAM VERSIONS AT A GLANCE

STEP 1: SELECT A PATH

- HERS and Prescriptive
- ASHRAE

STEP 2: Select State or Territory

Select State or Territory

ELIGIBILITY

These requirements apply to multifamily buildings except duplexes and townhomes. See [flow chart](#) (PDF, 28 KB) for all multifamily projects that may be eligible.

PROGRAM REQUIREMENTS



Next Steps

- Post documentation online in the Fall
- Develop training and guidance documents/tools
- Update website and notify stakeholders in November

Goal:

- Specification available January 2019
 - Buildings 6 stories and higher cannot use ERI path until ANSI/RESNET/ICC 301-2019 is available (mid to late 2019)
- Specification required for building permits January 1, 2021 and later

Summary

- ✓ Review of the CURRENT Multifamily programs
- ✓ Specification development timeline
- ✓ Overview of the new **MFNC** program
 - ✓ Eligibility
 - ✓ Certification Paths:
 - ✓ ERI, ASHRAE, Prescriptive
 - ✓ Mandatory Requirements:
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Resources

Draft program documentation currently posted at www.energystar.gov/mfspec

Webinar scheduled for November 28th

Contact mfnc@energystar.gov with any questions, for webinar recordings, or to be added to the stakeholder list for multifamily updates

Current programs:

Certified Homes: www.energystar.gov/homes

Multifamily High Rise: www.energystar.gov/mfhr