



U.S. DOE Zero Energy Ready Home Program  
 Multifamily National Program Requirements Version 2  
 Summary of Major Changes from Version 1 Revision 9

Program Component	Version 1, Revision 9.0	Multifamily Version 2	Rationale
<b>Built-In Best Practices (Mandatory Requirements)</b>			
<b>ENERGY STAR Prerequisite</b>	Requires certification under ENERGY STAR Multifamily New Construction (ESMFNC) V1.1 National or V1.2 WA/OR, depending on project location. Certification under V1.2 National also meets this criteria, but is not required.	Requires certification under <a href="#">ENERGY STAR Multifamily New Construction (ESMFNC) Version 1.2</a> , which is the most recent version of ESMFNC.	ZERH-MF V2 builds upon the efficiency and performance of ESMFNC and therefore references the highest efficiency ESMFNC program version available.
<b>Building Envelope Insulation Levels</b>	2015 IECC insulation requirements (Residential Chapter) for opaque areas.	2021 IECC insulation requirements ( <a href="#">Residential</a> or <a href="#">Commercial</a> chapter) for opaque areas.	All ZERH projects take advantage of the one chance to build a very high-performance envelope.
<b>Window U/SHGC Values in Dwelling and Sleeping Units</b>	Based on ENERGY STAR Windows Product Criteria V5.0 and 6.0 specs, depending on climate zone.	Based on ENERGY STAR Windows Product Criteria V6.0 specs for most climate zones, except for Very Cold Climates (6-8) which are more rigorous at U 0.25. Allowances provided for structural (Class AW) windows.	Updates the minimum window requirements to higher performance levels.
<b>Hot Water System Efficiency</b>	Requires an efficient hot water plumbing layout or the use of high efficiency water heater + water conserving fixtures (and a backstop for stored volume in hot water piping).	Also requires a maximum amount of stored volume in hot water piping (similar to V1). Allows continuous whole-building central recirculation systems, provided that pipe insulation requirements are met. Requires <a href="#">WaterSense</a> fixtures for in-dwelling showerheads, bath faucets and aerators.	Targeted measures to reduce water heating energy use, improve overall building performance, and generate water use savings.
<b>High Efficiency Lighting in Dwellings</b>	80% requirement.	100% requirement.	Recognizes the cost-effectiveness and availability of LEDs, and increases ZERH efficiency.
<b>Energy Efficient Appliances</b>	All builder-installed refrigerators, dishwashers, and clothes washers are ENERGY STAR certified.	All builder-supplied and installed in-dwelling refrigerators, dishwashers, clothes washers, and clothes dryers are <a href="#">ENERGY STAR certified</a> .	Recognizes ENERGY STAR labeling of clothes dryers and increases ZERH efficiency.



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<b>Built-In Best Practices (Mandatory Requirements), cont.</b>			
<b>Indoor Air Quality</b>	Certify under Indoor airPLUS (IAP) V1.	Continue to certify under IAP V1 for projects permitted on or before 12/31/2025. For permit dates on or after 1/1/2026, certify under Indoor airPLUS Version 2, Certified or Gold tier.  H/ERVs in Very Cold Climates (6-8).	Harmonizes the ZERH program’s indoor air quality protections with the updated provisions of the Version 2 Indoor airPLUS program .  Adds balanced energy efficient ventilation in very cold climates.
<b>Photovoltaic (PV) Ready</b>	Implement the ZERH PV-Ready Checklist in all locations with the requisite annual solar radiation.	PV-Ready Checklist is revised to specifically address Multifamily buildings and provides a solar-ready zone as defined by <a href="#">Appendix CB of the 2021 IECC</a> , covering at least 40% of the roof area. Include additional dead load in the design, pathway for conduit to the service panel shown in construction plans, space for an additional breaker, and documentation of all solar-ready provisions. These provisions apply in all locations, regardless of annual solar radiation.	Increases PV readiness in multifamily buildings in a flexible manner to provide a streamlined opportunity to add renewable energy in the future.
<b>Electric Vehicle Ready</b>	No requirement.	Provide EVSE, EV Capable, and EV Ready spaces for 20% of units or automobile parking spaces with designated capacity and connections as established by the EV-Ready Checklist.	Provides EV Charging infrastructure for a portion of parking spaces to enable electrified transportation for building residents.
<b>Heat Pump Water Heater Ready</b>	No requirement.	Dedicated circuit is installed and energized for each installed fossil fuel water heater in a dwelling. Space is reserved for a future electric (heat pump) water heater.	Lays the groundwork for the future installation of a HPWH and reduces retrofit cost and complexity.
<b>Heat Pump Space Heater Ready</b>	No requirement.	A dedicated circuit outlet or conduit, and condensate drain, are installed to facilitate a future heat pump installation for dwellings with installed fossil fuel space heaters.	Lays the groundwork for the future installation of a heat pump for space heating and reduces retrofit cost and complexity.



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<b>Efficiency Threshold</b>			
<b>Minimum Required Energy Efficiency Threshold</b>	Energy Rating Index (ERI) scores to qualify for ZERH in the 50s.	ERI scores to qualify for ZERH in the low- to mid-40s (when using the ERI compliance pathway). The ASHRAE and Prescriptive pathways are designed to achieve a similar level of energy efficiency (see below).	ZERH builds upon ESMFNC to achieve energy efficiency at least 15% beyond 2021 IECC.
<b>Program Compliance</b>			
<b>Compliance Path Based on ASHRAE 90.1</b>	No ASHRAE 90.1 compliance pathway.	Includes an ASHRAE 90.1 compliance pathway, which is also offered under ESMFNC.	Adding this element makes ZERH-Multifamily more accessible for commercial multifamily builders.