

Question: Do the new requirements in section C403.2.4 meet the Board’s requirement that “Provisions in both the main body of the code and the optional appendices must achieve a reasonable level of energy efficiency that is... lifecycle cost effective, considering economic feasibility, including potential costs and savings for consumers and building owners, and return on investment?”

Background:

Additional requirements in the prescriptive section C403.2.4 have been approved by the Commercial Consensus Committee for inclusion in the 2027 IECC without any evidence that they will result in energy conservation or lifecycle cost effectiveness.

The new requirements would require the installation of heat pumps wherever heating and cooling are required, regardless of climate zone. No evidence was provided to support the Committee statement that “the proposal significantly reduces energy usage associated with air-to-air HVAC systems providing space heating and cooling” in all climate zones. This does not meet the threshold stipulated in the Scope and Intent statement that “Provisions in both the main body of the code and the optional appendices must achieve a reasonable level of energy efficiency that is... lifecycle cost effective, considering economic feasibility, including potential costs and savings for consumers and building owners, and return on investment.”

In the June 2025 ASHRAE Journal article “Decarbonizing with Heat Pumps – Most Do, Some Don’t,”¹ Dr. Steve Kavanaugh provides evidence and analysis that details the uncertainty related to predicting the performance of Air-Source Heat Pumps (ASHPs) and Ground Source Heat Pumps (GSHPs). Dr. Kavanaugh recommends that “independent and thorough field testing of conventional and advanced technology heat pumps...should be conducted” to “better inform decarbonization efforts and minimize deceptive cold climate heat pump performance specifications.”

Until such investigation can be made, there is insufficient evidence to support adoption of this provision in the prescriptive pathway of the IECC.

Adoption of this appendix may also undermine the overarching objective of energy conservation. According to the U.S. Energy Information Administration’s 2025 Energy Outlook, natural gas is projected to remain a major source of electricity generation for at least the next two decades, even under optimistic zero-carbon scenarios. Additionally, the repeal of renewable energy incentives under the legislation signed in July 2025 further diminishes the likelihood of achieving low-cost zero-carbon energy.

Finally, it is important to note that adopting this provision into the main body of the code would contravene the Energy Policy Conservation Act (EPCA). EPCA preempts state and local regulations that affect the energy use of federally covered products such as (e.g., gas furnaces, boilers). The proposed sections C403.2.4 and C503.3.7 directly contravene EPCA by mandating the use of heat pumps as the primary space heating source, thus eliminating the option of using other federally approved equipment, such as fuel-fired furnaces or boilers. It is for this, in addition to other reasons, that a similar proposal is not moving forward in the ASHRAE 90.1 committee.

Therefore, further guidance is needed from the Board of Directors to determine if the IECC Consensus Committee and Subgroup actions and reasons are consistent with the Board’s previous interpretation of the IECC Scope and Intent.

1. Decarbonizing with Heat Pumps – Most Do, Some Don't; S. Kavanaugh, Ph.D; ASHRAE Journal Vol. 67, no. 6, June 2025