Consortium for Energy Efficiency

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Dear Residential New Construction Industry Stakeholder:

The Consortium for Energy Efficiency (CEE) seeks your comments on a draft proposal to revise the *CEE℠ Residential New Construction Initiative* to include updated efficiency tiers, a new carbon reporting requirement, and new prescriptive requirements. With over 30 years of market transformation experience and with membership in 38 states and 4 provinces representing 100 million electric customers and 50 million natural gas customers, CEE is where leading United States and Canadian efficiency program administrators develop consensus-based strategies to accelerate adoption of cutting-edge energy efficiency and load management solutions.

The Initiative was launched in 2018 and leverages a tiered specification framework with performance-based levels designed to grow the market of high-performance new construction in North America. It creates a foundation from which program administrators, utilities, and energy efficiency stakeholders can work collaboratively to drive market transformation in the new home landscape. This works to increase the overall performance of new homes, support the advancement and uptake of future building codes that align with program goals, and promote greater alignment in a traditionally fragmented market.

Over the past few years, the CEE Residential New Construction Committee has identified several opportunities for Initiative enhancements and additions, as reflected in this proposed specification. These span across both energy efficiency as well as load flexibility, to help members achieve decarbonization objectives. The scope of proposed changes includes the following:

1. Updated Energy Rating Index (ERI) tier levels to promote increasingly higher thresholds of whole-house energy efficiency.
2. Inclusion of a new carbon reporting index (CRI) reporting requirement to document and begin tracking time-of-use (TOU) greenhouse gas emissions of homes. This new metric data collection will inform future work on load shifting to minimize overall emissions.

3. **Inclusion of new minimum prescriptive requirements for critical large loads**, including space heating and cooling, water heating, and electric vehicle charging, to ensure high efficiency and grid flexibility opportunities are maximized.

CEE invites industry stakeholders to provide comments, along with supporting data, in response to the proposal described below. Our intent is to address and incorporate supported feedback through Committee review and deliberation before bringing it to the CEE Board for authorization. **We respectfully request that feedback to this letter be submitted to Shawn Torbert in writing by April 4, 2025.**

Proposed Specification

Table 1 summarizes the proposed CEE Residential New Construction Specification. The maximum ERI scores for each tier can be subsequently refined if members choose to implement more climate-specific thresholds, as noted in Table 2.

Table 1. CEE New Construction Specification

CEE Level	Energy Rating Index (ERI)	Other Requirements	Optional Additional Quality Assurance
CEE Tier 1	≤ 55*	• ENERGY STAR® SFNH Version 3.2 • Carbon Rating Index Reporting† • CEE HPWH, ASHP, and EVSE Specifications OR ENERGY STAR Next Gen⁻	• DOE Zero Energy Ready Homes^
CEE Tier 2	≤ 45*		
CEE Tier 3	≤ 35		
CEE Tier 4	≤ 10		

* For Tiers 1 and 2, CEE provides recommended ERI target scores by climate zone.

^ CEE recommends additional quality assurance measures, such as DOE Zero Energy Ready Home Version 2 to address the complex building science considerations associated with highly efficient homes.

† CO2e reporting requirement per the ANSI/RESNET/ICC 301-2019 Addendum D-2022 CO2 Rating Index (CRI).

⁻ Homes must include equipment that meets the active CEE Heat Pump Water Heater Specification, CEE Air Source Heat Pump Specification, and CEE Electric Vehicle Supply Equipment Specification or ENERGY STAR® NextGen™ certified or similar.

Table 2. Recommended ERI Target Scores by Climate Zone[1],[2]

Climate Zone	Tier 1	Tier 2
	2021 IECC (ERI Path)	ASHRAE 90.2-2024 Standard
Zone 1	≤ 52	≤ 43
Zone 2	≤ 52	≤ 43
Zone 3	≤ 51	≤ 45
Zone 4	≤ 54	≤ 47
Zone 5	≤ 55	≤ 47
Zone 6	≤ 54	≤ 46
Zone 7	≤ 53	≤ 46
Zone 8	≤ 53	≤ 46

The proposed specification can be adopted by any program in any region but is particularly applicable in the United States market where many states and local jurisdictions have adopted energy efficiency codes that reference ERI, making it a common requirement for new construction and renovations. CEE may develop a complementary specification that translates the ERI tier levels into equivalent metrics that are more directly relevant to the Canadian market in the future. Given that the building industry does not conduct much work across borders, and there is not yet significant demand from members to pursue a Canadian conversion, CEE plans to wait until a future iteration of the Initiative to consider development of an alternative specification targeted specifically to Canada's new construction market.

Updated Energy Rating Index (ERI) Levels

The foundation for the CEE Residential New Construction Specification is the Energy Rating Index (ERI), which is also synonymous with the RESNET HERS® (Home Energy Rating System) Index. The ERI is defined as a numerical score where 100 is equivalent to the 2006 IECC reference home and 0 is equivalent to a net-zero energy home. Each unit on the scale represents a one percent change in the total energy use of the rated design relative to the total energy use of the ERI reference design[3], with lower ERI values representing higher-efficiency homes. The individual CEE tiers recognize increasingly

[1] "2021 International Energy Conservation Code (IECC): Chapter 4 [RE] Residential Energy Efficiency," International Code Council, accessed December 5, 2024, https://codes.iccsafe.org/content/IECC2021P1/chapter-4-re-residential-energy-efficiency.

[2] "ANSI/ASHRAE Standard 90.2, High-Performance Energy Design of Residential Buildings," ASHRAE, accessed December 5, 2024, https://www.ashrae.org/news/esociety/ansi-ashrae-standard-90-2-high-performance-energy-design-of-residential-buildings.

[3] "Energy Rating Index Performance Path," RESNET, accessed December 5, 2024, https://www.resnet.us/wp-content/uploads/Energy-Rating-Index-Performance-Path-Frequently-Asked-Questions.pdf

high-performing homes, with the highest tier representing an ERI score of near zero without the use of onsite power production (OPP)[4] or renewables.

The increasingly stringent ERI levels of CEE's tiers demonstrate and reinforce the trajectory of high-performing homes through a performance-based approach and may enable highly efficient homes to reach net-zero energy with the addition of OPP or renewable energy. As an added benefit, positive non-energy impacts (NEIs) such as lower operating costs and increased health and comfort for owners and occupants are often introduced as efficiency increases. The inclusion of four distinct tier levels is designed in part to accommodate the diverse spread of new construction program baselines throughout the United States and Canada. As the energy efficiency market has advanced significantly since 2018, the earlier new construction specification's Tier 0 and Tier 1 levels have become increasingly obsolete for many members, leading CEE to eliminate them from the proposed specification.

CEE members value the role and market signal of federal labeling platforms that align with their program objectives, and initiatives like EPA ENERGY STAR® Certified Homes and DOE Zero Energy Ready Home (ZERH) continue to serve as meaningful tools for differentiation in the market. As such, the CEE tiers continue to stipulate compliance with EPA ENERGY STAR® Certified Homes as a minimum prerequisite for all tiers. The tiers also cite DOE ZERH as optional criteria, given the program incorporates additional quality assurance measures that some members may wish to promote, such as enhanced building practices, risk mitigation features, and increased verification. The foundational criteria of the ENERGY STAR and DOE ZERH platforms further instill quality practices among the building industry and helps prepare the market to meet increasingly stringent efficiency levels as well as conduct quality assurance measures in the future.

New Carbon Rating Index (CRI) Requirement

To support an increasing emphasis on decarbonization and advanced demand flexibility, CEE sees carbon reporting as a critical enabling step to improve transparency and quantify greenhouse gas reduction. Because such a metric should be well-defined, standardized, and straightforward to calculate, CEE proposes adoption of the ANSI/RESNET/ICC 301 2022 Addendum B CO2e Rating Index (CRI) with this specification revision. In essence, CRI combines hourly CO2e emission rates and electricity generation emission projections from NREL[5] with the hourly energy consumption estimates given by

[4] "Draft PDS-01, BSR/RESNET/ICC 301-2022 Addendum A-202x," RESNET, accessed January 14, 2025. https://www.resnet.us/about/standards/resnet-ansi/draft-pds-01-bsr-resnet-icc-301-2022-addendum-b-co2-index/

[5] Cambium, a platform developed by the National Renewable Energy Laboratory (NREL), provides long-run marginal emission rates (LMERs) for different electricity generation sources and geographic regions.

the ERI calculation to provide a new metric assessing whole-home carbon emissions. Energy modelers do not require any additional inputs or data to generate a CRI beyond those already required for the ERI, so there should not be any incremental cost or burden in acquiring these values.

With this revision, CEE is proposing to require the CRI as a *reporting requirement* and will use the data to help inform future specification revisions and the possible requirement of a CRI threshold. In requiring the reported values, CEE aims to gain insight into where current CRI values fall; if and how they correspond to ERI levels or specific building measures; and areas where load flexibility may provide unique emissions benefits compared to an efficiency-only approach. The Committee is also interested in considering the potential to incorporate CRI requirements into new specification levels in the future, and obtaining this initial information will be a critical first step in understanding potential implications.

Additional Prescriptive Measures

To better assure energy efficiency, load flexibility, and connectivity for key large loads in new construction, CEE is proposing adopting specific new prescriptive requirements. In particular, the draft specification stipulates that homes must include equipment that either:

1. Meets the current CEE Heat Pump Water Heater Specification, CEE Air Source Heat Pump Specification, and CEE Electric Vehicle Supply Equipment Specification; OR
2. Meets the ENERGY STAR® NextGen™ requirements.

This new prescriptive element of the CEE specification is intended to ensure that all homes have highly efficient and connected capabilities for those large loads that offer significant potential grid benefit. When combined with the overarching approach of incorporating increasingly stringent tiers defined by the ERI scores, this will offer credible energy benefits, accelerate grid flexibility, and drive consistent strategies for broader market transformation.

Questions for Industry

CEE welcomes your input on any aspects of the proposed revision, but specifically seeks your feedback on the following:

1. Do the proposed ERI levels demonstrate achievable savings that are cost-effective?
2. Are there any concerns or implications associated with including a CRI reporting requirement?

3. Are there concerns or other considerations regarding the proposed prescriptive requirements for large loads and connectivity?

Process and Desired Timeline

We welcome comments on the proposed *CEE Residential New Construction Initiative* specification from all stakeholders invested in the new homes market, including builders, raters, manufacturers, and industry representatives. **We respectfully request the submission of all feedback to CEE, in writing, by April 4, 2025. CEE staff are also happy to discuss this proposal by appointment.**

Once comments and supporting evidence are received, the CEE Whole House Committee will review all feedback and consider whether any modifications to the proposed criteria are warranted. Should the Committee conclude that significant modifications to the proposal are warranted, CEE will continue refining until any remaining issues have been resolved; this may entail an additional industry comment period. The Committee will bring a finalized Initiative proposal to the CEE Board of Directors for authorization and an immediate effective date.

CEE staff are happy to answer any questions you may have regarding CEE, its initiatives and specifications, or the specification revision process and timeline. A copy of the full draft CEE Residential New Construction Initiative is available upon request. Please contact me at storbert@cee1.org. Thank you for your interest.

Sincerely,

Shawn Torbert
Program Manager