



Massachusetts Commercial Energy-Zero (E-Z) Code Summary

The Massachusetts E-Z Code defines a zero-energy building as an ultra-low-energy, combustion-free building that sources 100 percent of its annual energy from additional renewable energy. The MA Commercial E-Z Code offers multiple compliance paths for the design of commercial zero-energy buildings: a prescriptive path, a performance path (with prescriptive backstops), and a Passive House certification path. The prescriptive path may be selected for new buildings instead of the performance path which relies on energy modeling. The prescriptive path has been named the "E-Z" path because it enhances building energy efficiency, is simpler to apply, and supports a more streamlined regulatory review for compliance.

In addition to offering a prescriptive compliance path, the MA Commercial E-Z Code addresses the electrification of buildings, a critical strategy for the Commonwealth to reach carbon neutrality. The MA Commercial E-Z Code modifies IECC 2021 Appendix CC: Zero Energy Commercial Building Provisions to limit renewable energy sources to those that meet "additionality", ensuring that the renewable energy will have a net positive effect on Massachusetts greenhouse gas (GHG) emissions. The MA Commercial E-Z Code also addresses demand response, resilience, and several other topics that minimize a new building's life cycle impact on GHG emissions.

The MA Commercial E-Z Code includes the following:

- 1) A prescriptive compliance path, offering a straightforward approach to building energy performance. This path does not require whole building energy modeling to demonstrate compliance.
- 2) A performance (energy model) compliance path, matching IECC 2021 Appendix CC.
- 3) A prescriptive backstop for projects using the performance (energy model) path. The backstop avoids the variability that can come from relying solely on energy modeling for compliance.
- 4) Passive House certification compliance path for energy efficiency.
- 5) A second prescriptive compliance path which does not preclude the use of energy sources that utilize on-site combustion. The second compliance path requires a minimum weighted average COP for building heating and service water heating, providing flexibility (with exceptions).
- 6) A pass/fail criteria for renewable energy sources with no weighting factors. The requirements provide a straightforward path while ensuring that the source of renewable energy is additional, creating a new tangible net reduction in GHG emissions that otherwise would not have occurred.
- 7) Additional requirements to address the critical issues of resilience and demand management.

Jurisdictional electives for lifecycle assessment, global warming potential, building commissioning & recommissioning, post-occupancy evaluation, and benchmarking & disclosure.

The creation of the Massachusetts Energy-Zero Code (MA E-Z Code) was a consensus-based process, drawing from professionals with extensive experience with zero and high-performance buildings in Massachusetts and the surrounding region, review of precedent zero energy codes and standards, and feedback from municipal and regulatory representatives. The development and management of this code was organized by Northeast Energy Efficiency Partnerships (NEEP), www.neep.org. For more information, contact Darren Port (dport@neep.org) or Cornelia Wu (cwu@neep.org)