



# SUSTAINABLE CONCORD

Revolutionary Resilient Ready

## ACTION IMPLEMENTATION BLUEPRINT

ACTION NAME	Establish policies for new development to achieve Zero Net Energy or Zero Net Carbon.		
DESCRIPTION OF ACTION	Use policy mechanisms to support energy efficiency optimization, renewable energy generation, energy storage, and grid harmonization to achieve zero net energy performance in new construction. A zero net energy building is an energy-efficient building where, on a source energy basis the annual delivered energy is less than or equal to the amount of energy generated on-site and exported.		
CLIMATE BENEFIT	Any energy used in a ZNE building will either be generated by on-site renewable sources or will be offset by renewable production. This results in the lowest energy use-associated carbon footprint possible for a building.		
CHAMPION	Placeholder.		
IMPLEMENTATION STEPS	PLANNING CONSIDERATIONS		
	Timeframe	Key Partners	Funding Resources
1. Adopt new MA stretch energy code (once finalized by MA DOER) & Zero Net Energy Stretch Code (when available)	2020	<ul style="list-style-type: none"> <li>MA Department of Energy Resources</li> <li>International Code Council (International Energy Conservation Code)</li> <li>Board of Building Regulations &amp; Standards</li> </ul>	N/A



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<p>2. Design and roll out town-wide outreach and awareness campaign, including industry training and education:</p> <ul style="list-style-type: none"> <li>a. Town sponsored workshops, CMLP Workforce Education and Training, and other private providers – coordinate to offer a full spectrum of ZNE and energy efficiency related education, certificates, and career training.</li> <li>b. Provide targeted training for the full spectrum of commercial contractors (small, medium and large commercial contractors) on quality installation, commissioning, and advanced controls.</li> </ul> <p>3. Leadership commitment program for property owners and developers</p> <ul style="list-style-type: none"> <li>a. Create a voluntary leadership-based program for those property owners, developers, and property managers looking to pursue ZNE earlier than required. This will build local knowledge and support for ZNE ahead of requirements.</li> </ul>	<p>2021-2023</p>	<ul style="list-style-type: none"> <li>• Developers</li> <li>• Property owners</li> <li>• Commercial tenants</li> <li>• Homeowners</li> </ul>	<p>CMLP, National Grid</p>
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<p>4. Design assistance program – design, construction, and performance incentives for new construction aimed at ZNE, based on energy use intensity targets</p> <ul style="list-style-type: none"><li>a. Building from leadership program, set up peer to peer mentorship and communication networks to foster development of best practices and knowledge within the construction and development community</li><li>b. Leverage existing expertise from building sustainability entities such as <a href="#">Passive House Institute US</a>, <a href="#">National Renewable Energy Laboratory</a>,</li></ul>	<p>2021-2024</p>	<ul style="list-style-type: none"><li>• Developers</li><li>• Property owners</li><li>• Commercial tenants</li><li>• Homeowners</li></ul>	<p>CMLP, National Grid</p>
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<p>5. New construction rebates – incentives for high performance building technologies – most notably and importantly highly-efficient building envelopes that are as close to <a href="#">passive building standard</a> as possible and on-site renewable energy generation</p> <ol style="list-style-type: none"> <li>a. Building envelope and thermal efficiency should be first priority. Once high-efficiency standards have been met, building systems can meet occupant living standards with much lower energy demand.</li> <li>b. Could potentially implement a “Nearly Zero Net Energy Buildings” code requiring that new buildings be very highly efficient as a partial step on the path to ZNE. This approach was taken by the European Union, where NZEB’s are now required for all new construction across member countries.</li> </ol>	<p>2021-2025+</p>	<ul style="list-style-type: none"> <li>• Developers</li> <li>• Property owners</li> <li>• Commercial tenants</li> <li>• Homeowners</li> </ul>	<p>CMLP</p>
<p>6. Municipal ZNE requirement for new buildings or renovations – lead by example</p>	<p>Announce in 2021 for effective date in 2023</p>	<ul style="list-style-type: none"> <li>• Developers</li> <li>• Performance contractors</li> </ul>	<p>Town of Concord</p>
<p>7. Town-wide ZNE requirement for new construction – to a large extent, the adoption of ZNE buildings will require a top-down approach from the town. <a href="#">European Union countries</a> and the <a href="#">State of California</a> enacted ZNE requirements by announcing ZNE code changes multiple years in advance, giving the market time to respond and ramp up capability.</p>	<p>Announce in 2021 for effective date in 2025</p>	<ul style="list-style-type: none"> <li>• Developers</li> <li>• Property owners</li> <li>• Commercial tenants</li> <li>• Homeowners</li> </ul>	<p>CMLP Developers Property owners</p>



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TRADEOFFS (CHALLENGES/BARRIERS)	EQUITY CONSIDERATIONS
<ul style="list-style-type: none"> <li>• Stakeholders resistance – primarily from developers</li> <li>• Siloed stakeholders – partitions exist between renewable energy, storage, demand response, and construction</li> <li>• Renewable resource ownership models</li> <li>• Local grid conditions</li> <li>• Technology costs</li> </ul>	<p>With potential for increased design and construction costs, resources may need to be developed to assist developers, builders, and property/homeowners cope with additional upfront financial burden.</p>
MEASURING SUCCESS	ENGAGING THE COMMUNITY
<p><b>Outputs:</b> Increase in local knowledge of ZNE and renewable energy technologies and practices, reduction in energy use intensity of new buildings, increase in proportion of energy demand being met by renewables.</p> <p><b>Outcomes:</b> Reduced carbon emissions, meeting of energy demand needs, and more resilient community.</p>	<p>If designed and implemented effectively, action steps 2 and 3 will serve as great opportunity to communicate with all stakeholders on the benefits of ZNE requirements.</p>