



THE COMMONWEALTH OF MASSACHUSETTS
OFFICE OF THE ATTORNEY GENERAL
ONE ASHBURTON PLACE
BOSTON, MASSACHUSETTS 02108

MAURA HEALEY
ATTORNEY GENERAL

(617) 727-2200
(617) 727-4765 TTY
www.mass.gov/ago

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Patrick Woodcock, Commissioner
Ian Finlayson, Deputy Director, Energy Efficiency Division
Massachusetts Department of Energy Resources
100 Cambridge Street, Suite 1020
Boston, MA 02114
stretchcode@mass.gov

Re: ***Building Code Comments***

Dear Commissioner Woodcock and Mr. Finlayson:

Pursuant to the Department of Energy Resources' ("DOER") Notice of Public Comment and Hearing published on July 8, 2022,¹ the Office of the Attorney General ("AGO") submits the following comments on DOER's draft Residential Low-Rise Stretch Energy Code and Specialized Opt-in Code Language² and draft Commercial and Other Stretch Energy Code and Specialized Opt-in Code Language.³

¹ Department of Energy Resources, Notice of Public Comment and Hearing, at 2, July 8, 2022, [DOER Notice], <https://www.sec.state.ma.us/spr/sprpub/070822a.pdf>.

² Department of Energy Resources, Residential Low-Rise Stretch Energy Code and Specialized Opt-in Code Language, June 24, 2022, <https://www.mass.gov/doc/225-cmr-2200-residential-low-rise-specialized-stretch-energy-code-redline-june-24-2022-0/download>.

³ Department of Energy Resources, Commercial and Other Stretch Energy Code and Specialized Opt-in Code Language, June 24, 2022, <https://www.mass.gov/doc/225-cmr-2200-commercial-specialized-stretch-energy-code-redline-june-24-2022-0/download>.

I. BACKGROUND

A. Massachusetts Climate Roadmap Act

On March 26, 2021, Governor Charlie Baker signed into law *An Act Creating a Next-Generation Roadmap for Massachusetts Climate Policy* (the “Climate Roadmap Act”).⁴ The Climate Roadmap Act shifted the authority for the existing stretch energy code (“Stretch Energy Code”) from the Board of Building Regulations and Standards (“BBRS”) to DOER⁵ and authorized DOER to update the Stretch Energy Code.⁶ Additionally, the Climate Roadmap Act directs DOER to develop and promulgate a municipal opt-in specialized stretch energy code (“Specialized Opt-in Code”).⁷ Specifically, the Climate Roadmap Act requires that DOER shall:

[D]evelop and promulgate, in consultation with the state board of building regulations and standards, a municipal opt-in specialized stretch energy code that includes, but is not limited to, net-zero building performance standards and a definition of net-zero building, designed to achieve compliance with the commonwealth’s statewide greenhouse gas emission limits and sublimits established pursuant to chapter 21N.⁸

⁴ St. 2021, ch. 8.

⁵ DOER Notice, at 1. The Stretch Energy Code was previously codified as 780 CMR 115.AA and 780 CMR 110.AA, and the updated Stretch Energy code will appear as new regulations in 225 CMR 22.00 and 225 CMR 23.00. *Id.*

⁶ Climate Roadmap Act, § 98A.

⁷ The Climate Roadmap Act establishes a three-tier code structure: (1) the existing base building code, (2) the existing Stretch Energy Code, and (3) the Specialized Opt-in Code. Pursuant to G.L. c. 143, the BBRS is charged with regularly updating the state building code, including the energy provisions of the code. *See* G.L. c. 143, §§ 93, 94. As part of the Green Communities Act, Massachusetts approved a stretch energy code that may be adopted by municipalities. *See An Act Relative to Green Communities*, St. 2008, ch. 169, § 22 (codified, as amended, at G.L. c. 25A § 10). Following the promulgation of the Specialized Opt-in Code, a third energy code option will be available for municipalities to adopt.

⁸ Climate Roadmap Act at § 31. The Commonwealth has “a 2050 statewide emissions limit that achieves at least net zero statewide greenhouse gas emissions,” G.L. c. 21N § 3, and the Secretary of Energy and Environmental Affairs (“Secretary”) must adopt interim 2025, 2030, 2035, 2040, and 2045 statewide emissions limits. *Id.* Additionally, the Secretary must adopt sector-based statewide greenhouse gas emissions sublimits for the sectors of electric power, transportation, commercial and industrial heating and cooling, residential heating and cooling, industrial processes, and natural gas distribution and service. G.L. c. 21N § 3A.

B. DOER's Straw Proposal

On February 8, 2022, DOER released a straw proposal on its proposed updates to the Stretch Energy Code and on the Specialized Opt-in Code (the “Straw Proposal”).⁹ DOER held five public hearings on the Straw Proposal in March 2022 and received over 1,200 written comments.¹⁰ The Massachusetts AGO submitted comments on the Straw Proposal focusing on the scope of DOER's authority to develop and promulgate the Specialized Opt-in Code.¹¹

II. DRAFT CODE LANGUAGE

A. Draft Updated Stretch Energy Code Language¹²

DOER proposes updates to the existing residential low-rise stretch energy code and the existing commercial stretch energy code (together the “Updated Stretch Energy Code”). With respect to residential low-rise buildings, the Updated Stretch Energy Code offers two energy

⁹ See Department of Energy Resources, *Building Energy Straw Code Proposal: Updated Stretch Code & Specialized Opt-in Code*, February 2022, [Straw Proposal], <https://www.mass.gov/doc/building-energy-code-straw-proposal-updated-stretch-code-specialized-opt-in-code-feb-2022/download>. In addition to DOER's proposed updates to the Stretch Energy Code, the BBRS is updating the base building code (“Updated Base Code”), which will be based on modified versions of the 2021 International Code series. Board of Building Regulations and Standards, Unofficial Tenth Edition Base Code Draft (780 CMR), <https://www.mass.gov/handbook/unofficial-tenth-edition-base-code-draft-780-cmr>. The Updated Base Code is expected to go into effect in January 2023. Department of Energy Resources, *Massachusetts Stretch Code & Specialized Code Draft Regulations: Informational Webinar*, at 3, July 7, 2022, [DOER Draft Regulations Webinar] <https://www.mass.gov/doc/doer-stretch-code-informational-webinar-slides/download>.

¹⁰ Department of Energy Resources, *Stretch Energy Code Development 2022*, <https://www.mass.gov/info-details/stretch-energy-code-development-2022>; see Stretch Code Public Comments, <https://www.mass.gov/lists/stretch-code-public-comments>.

¹¹ See Attorney General's Office, *Stretch Code Straw Proposal Comments*, March 18, 2022, [AGO's Straw Proposal Comments], <https://www.mass.gov/lists/stretch-code-public-comments>.

¹² The summaries of the draft code language included here provide an overview of certain aspects of the Updated Stretch Energy Code and Specialized Opt-in Code. They do not address many details of the code language and are not intended to be comprehensive.

efficiency compliance pathways: (1) the Passivehouse Pathway,¹³ and (2) the Home Energy Rating Scores (HERS) Pathway.¹⁴ The Updated Stretch Energy Code lowers the maximum allowable HERS ratings for residential low-rise buildings as set forth in the table below.

On-site Clean Energy Application	Maximum HERS Index score (before renewable energy credit)				
	New construction			Alterations, Additions and Change of use	
	Updated Stretch Code July 1, 2024	Updated Stretch Code (Same as base code)	Current Stretch Code	Updated Stretch Code	Current Stretch Code
None (Fossil fuels)	42	52	55	52	65
Solar		55	60	55	70
All-Electric	45	55	60	55	70
Solar & All-Electric		58	65	58	75

Source: DOER Summary at 3, Table 1: Changes to Maximum HERS Index^{15, 16}

¹³ 225 CMR 22 §§ R401.2.2, R405. All cites to 225 CMR 22.00 and 225 CMR 23.00 are to the June 24, 2022 draft language. Passivehouse is a “building standard that includes” a “[s]uper-efficient building envelope” and “[i]mproved indoor air quality with high performance ventilation.” Straw Proposal at 45.

¹⁴ *Id.* at §§ R401.2.3, R406; Department of Energy Resources, Summary of Proposed New 225 CMR 22.00 and 23.00, 2023 Stretch Energy Code Update and Municipal Opt-in Specialized Code, at 3, June 24, 2022, [DOER Summary] <https://www.mass.gov/doc/a-summary-of-the-proposed-specialized-stretch-energy-code-regulation-published-june-24-2022/download>; *see also* DOER Draft Regulations Webinar at 8. Under the HERS index, homes that use more energy have higher HERS ratings, and homes that use less energy have lower HERS ratings. *See* Straw Proposal, at 16.

¹⁵ The Updated Stretch Energy Code defines an “All Electric Building” as “[a] building with no on-site combustion equipment for fossil fuel use or capacity for including fossil fuel use in space heating, water heating, cooking, or drying appliances.” 225 CMR 22 § R202; 225 CMR 23 § C2 (the residential code uses the same definition of “all electric building” as the commercial code, except that the commercial code definition includes the second underlined “for” while the residential code does not; the AGO assumes this difference is inadvertent).

¹⁶ The Updated Stretch Energy Code defines a “Mixed-Fuel Building” as “[a] building that contains combustion equipment or includes piping for such equipment.” 225 CMR 22 § R202; 225 CMR 23 § C2.

With respect to commercial buildings, including multi-family commercial buildings, the Updated Stretch Code includes five code pathways:¹⁷ (1) the Prescriptive Pathway (available for nonresidential buildings up to 20,000 sf),¹⁸ (2) the Targeted Performance/Thermal Energy Demand Intensity (TEDI) Pathway (required for offices, residential buildings, and schools over 20,000 sf; available for all buildings),¹⁹ (3) the Relative Performance Pathway (available for high ventilation buildings such as labs and hospitals),²⁰ (4) the Passivehouse Pathway (available for all building types),²¹ and (5) the HERS Pathway (available for multi-unit residential buildings larger than those covered by the residential low-rise code).²²

The Updated Stretch Energy Code also includes certain electrification requirements. Under the commercial code, partial electrification of space heating is required for highly ventilated buildings following the Relative Performance Pathway.²³ Additionally, full electrification of space heating is required for certain curtainwall buildings using a less stringent curtainwall envelope.²⁴

¹⁷ DOER Summary, at 5-6; *see also* DOER Draft Regulations Webinar at 11. Allowable use of each pathway is based on the type of building.

¹⁸ 225 CMR 23 § C401.2.1(1).

¹⁹ *Id.* at §§ C401.2.1(2), C407.1.

²⁰ *Id.* at §§ C401.2.1(3), C407.2.

²¹ *Id.* at §§ C401.2.2(1), C407.3.

²² *Id.* at §§ C401.2.2(2); C407.4.

²³ 225 CMR 23 § C401.4.1 (requiring electric air source or ground source heat pumps sized to 25% of the building's peak heating load to be used for space heating); DOER Summary at 6.

²⁴ 225 CMR 23 § C401.4.2; DOER Summary at 6.

The Updated Stretch Energy Code also requires, for multi-family and business use buildings, that 20% of parking spaces be prewired for electric vehicle (EV) charging.²⁵

B. Draft Specialized Opt-in Code Language

DOER's summary of the draft code language states that the Specialized Opt-in Code residential and commercial regulations "are a set of **net-zero building performance standards** that adopts a broad **Net-zero Building** definition intended to cover all new buildings in the Specialized Code."²⁶ The Specialized Opt-in Code defines "Net Zero Building" as "[a] building which is consistent with achievement of MA 2050 net zero emissions, through a combination of highly energy efficient design together with being either a *Zero Energy Building*, or an *All-Electric Building*, or where fossil fuels are utilized, a building fully pre-wired for future electrification and that generates solar power on-site from the available *Potential Solar Zone Area*."^{27, 28} As described in the definition of Net Zero Building, the Specialized Opt-in Code offers three pathways to

²⁵ 225 CMR 22 § R404.4; 225 CMR 23 § C405.13; DOER Summary at 4, 7. The proposed Updated Base Code requires at least 1 space per home to be prewired for EV charging. *Id.* at 4. For multi-family and commercial buildings, it requires that 10% of new parking spaces be prewired for EV charging. *Id.* at 7.

²⁶ *Id.* at 9 (emphasis in original).

²⁷ 225 CMR 22 § RC101.3; DOER Draft Regulations Webinar at 20. The commercial code does not include a definition of "Net Zero Building" but defines "Net Zero Emissions Building" as "[a] building which is consistent with achievement of MA 2050 net zero emissions, through a combination of highly energy efficient design together with being either a *Zero Energy Building*, or an *All-Electric Building*. *Mixed Fuel buildings*, may also meet this standard where the building is fully pre-wired for future electrification and generates solar power on-site from the available *Potential Solar Zone Area*." 225 CMR 23 § CC102.1. The AGO recommends that DOER align the terms and definitions in the final regulations.

²⁸ "Potential Solar Zone Area" is defined as "[t]he combined area of any low-sloped roofs and any steep-sloped roofs oriented between 90 degrees and 300 degrees of true north where the annual solar access is 70 percent or greater. Annual solar access is the ratio of 'annual solar insolation with shade' to the 'annual solar insolation without shade.' Shading from obstructions located on the roof or any other part of the building shall not be included in the determination of annual solar access." 225 CMR 22 § RC101.3; 225 CMR 23 § CC102.1.

demonstrate energy code compliance for both residential and commercial buildings: (1) the Zero Energy Pathway, (2) the All-Electric Pathway, and (3) the Mixed-Fuel Pathway.²⁹

1. Residential Specialized Opt-in Code

In the residential code, a “Zero Energy Building” is defined as “[a] building which through a combination of highly energy efficiency design and onsite renewable energy generation is designed to result in net zero energy consumption over the course of a year as measured in MMBtus or KWh_{eq}, on a site energy basis, excluding energy use for charging vehicles.”³⁰ Residential buildings following the Zero Energy Pathway must either demonstrate a HERS rating of 0 or less, after onsite solar generation is factored in, or comply with the Phius ZERO building performance standard, which includes a requirement to net out energy use on an annual basis with renewable energy.³¹ If using fossil fuels, the building must be prewired for future electrification.³²

As noted above, an All-Electric Building is defined as a building with no onsite combustion equipment for fossil fuel use and no capacity for including fossil fuel use,³³ and any building that contains combustion equipment or includes piping for such equipment is considered a Mixed-Fuel Building.³⁴ Both building types must meet the applicable energy efficiency requirements included in the Updated Stretch Energy Code. Additionally, Mixed-Fuel Buildings utilizing the HERS pathway must install solar panels that provide no less than 4kW per dwelling unit for one- and

²⁹ 225 CMR 22 § RC101.1; 225 CMR 23 § CC101.3.

³⁰ 225 CMR 22 § RC101.3.

³¹ 225 CMR 22 § RC102; DOER Summary at 12.

³² 225 CMR 22 § RC104.3; DOER Draft Regulations Webinar at 17.

³³ 225 CMR 22 § R202.

³⁴ *Id.*

two-family homes and no less than 0.75W/ft² for multifamily homes, with an exemption for shaded sites.³⁵ Mixed-Fuel Buildings utilizing the Passivehouse pathway are not required to install solar panels but must have solar-ready roofs.³⁶ Mixed-Fuel Buildings must also be prewired for future electrification.³⁷

2. Commercial Specialized Opt-in Code

The Specialized Opt-in Code maintains the same energy efficiency requirements as the Updated Stretch Energy Code for all building types, except that multifamily buildings must achieve precertification to Passivehouse standards.³⁸

The commercial code uses the same definition of Zero Energy Building as the residential code, except that it includes “community-based renewable energy generation” as an option to reach net zero energy consumption.³⁹ Additionally, as in the residential code, Zero Energy Buildings with any capacity for onsite fossil fuel use must be prewired for future electrification.⁴⁰

Under the commercial code, buildings utilizing the Mixed-Fuels Pathway must comply with minimum efficiency requirements for space and water heating and be prewired for electrification.⁴¹ Additionally, these buildings must comply with an onsite renewable energy requirement by (i) installing equipment for onsite renewable energy with a rated capacity of not

³⁵ 225 CMR 22 § RC104.4; DOER Summary at 11-12. Buildings where all areas of the roof that would otherwise meet the requirements for solar are in full or partial shade for more than 70 percent of daylight hours annually are exempt from the solar installation requirements. *Id.* at § RC105.1.

³⁶ *Id.* at § RC104.4; DOER Summary at 11-12.

³⁷ 225 CMR 22 § RC104.3; DOER Summary at 11.

³⁸ 225 CMR 23 § CC101, Table CC101.2; DOER Summary at 13.

³⁹ 225 CMR 23 § CC102.1.

⁴⁰ *Id.* at §§ CC101.3, CC105, CC106.

⁴¹ *Id.* at §§ CC101.3., CC105, CC106; DOER Summary at 13.

less than 1.5W/ft² multiplied by the sum of the gross conditioned floor area of the three largest floors, or (ii) where the building cannot meet the requirement in full, installing a partial system designed to utilize not less than 75% of the Potential Solar Zone Area.⁴²

III. COMMENTS

A. The AGO Reiterates That DOER Has the Authority to Promulgate a Specialized Opt-in Code That Includes All-Electric Requirements.

As discussed more fully in the AGO's Straw Proposal Comments,⁴³ DOER has the authority, pursuant to the Climate Roadmap Act, to promulgate a Specialized Opt-in Code that includes all-electric requirements.⁴⁴ In directing DOER to promulgate a Specialized Opt-in Code "that includes, but is not limited to, net-zero building performance standards and a definition of net-zero building, designed to achieve compliance with the commonwealth's statewide greenhouse gas emission limits and sublimits established pursuant to chapter 21N,"⁴⁵ the Legislature granted DOER broad authority, in line with its other powers and duties, to develop and promulgate the Specialized Opt-in Code. Particularly where the Commonwealth has established policy that

⁴² 225 CMR 23 § CC105.2; DOER Summary at 13.

⁴³ The AGO's Straw Proposal Comments are fully incorporated and reiterated herein.

⁴⁴ See AGO's Straw Proposal Comments at 8-15.

⁴⁵ Climate Roadmap Act § 31.

promotes the decarbonization of the building sector through electrification,⁴⁶ DOER may exercise that authority to put forth a Specialized Opt-in Code that includes all-electric requirements.⁴⁷

The energy code structure set forth by the Climate Roadmap Act, which establishes a three-tier statewide program, reinforces this point.⁴⁸ The Act granted DOER the authority to update the existing Stretch Energy Code, in addition to promulgating a new Specialized Opt-in Code.⁴⁹ It further made clear that communities designated as green communities in accordance with the Green Communities Act⁵⁰ are not required to adopt the Specialized Opt-in Code to maintain their green community status.⁵¹ Thus, municipalities that choose to do so may opt in to a new tier of the energy code, the Specialized Opt-in Code,⁵² that includes net-zero building performance standards and a definition of net-zero building and is designed to achieve compliance with the Commonwealth's greenhouse gas emission limits and sublimits.⁵³ These limits establish sector-

⁴⁶ See AGO's Straw Proposal Comments at 9 (citing Executive Office of Energy and Environmental Affairs, *Massachusetts 2050 Decarbonization Roadmap*, at 44-45, December 2020, <https://www.mass.gov/doc/ma-2050-decarbonization-roadmap/download>); see also Executive Office of Energy and Environmental Affairs, *Massachusetts Clean Energy and Climate Plan for 2025 and 2030*, at 47, June 30, 2022, [CECP], ("The Commonwealth's dominant building decarbonization strategy continues to be maximizing energy efficiency and electrifying thermal demands."), <https://www.mass.gov/doc/clean-energy-and-climate-plan-for-2025-and-2030/download>.

⁴⁷ AGO's Straw Proposal Comments at 9.

⁴⁸ *Id.* at 11.

⁴⁹ Climate Roadmap Act § 98A.

⁵⁰ *An Act Relative to Green Communities*, St. 2008, ch. 169.

⁵¹ Climate Roadmap Act § 98A.

⁵² See CECP at 53 ("The specialized code reflects more stringent energy standards that align with the Commonwealth's long-term building decarbonization goals.").

⁵³ Climate Roadmap Act § 31.

specific requirements that require near-term action. Specifically with respect to buildings, the Secretary has established the following sector-based sublimits for 2025 and 2030:⁵⁴

	2025	2030
Residential Heating and Cooling	29%	49%
Commercial & Industrial Heating and Cooling	35%	49%

*Limits are represented as percentage reductions as compared to 1990 levels.

Pursuant to the Climate Roadmap Act, DOER has broad authority to draft the Specialized Opt-in Code regulations, applying its specialized knowledge and expertise, to achieve compliance with the Commonwealth's greenhouse gas emissions limits.

Moreover, as discussed in the AGO's Straw Proposal Comments, the AGO's determinations regarding certain by-laws adopted by the Town of Brookline⁵⁵ apply analysis that is distinct from the analysis of DOER's authority pursuant to the Climate Roadmap Act.⁵⁶ Those determinations examined whether particular by-laws adopted by a municipality conflicted with the Commonwealth's laws and thus contravened the Home Rule Amendment to the Massachusetts Constitution.⁵⁷ The Home Rule Amendment does not apply to DOER as a state agency, and the AGO's determinations regarding preemption of local action do not apply to DOER action taken pursuant to express statutory authority.⁵⁸

⁵⁴ Secretary of Energy and Environmental Affairs, Determination of Statewide Greenhouse Gas Emissions Limits and Sector-Specific Sublimits for 2025 and 2030, June 30, 2022, <https://www.mass.gov/doc/2025-and-2030-ghg-emissions-limit-letter-of-determination/download>.

⁵⁵ See Brookline Special Town Meeting of November 19, 2019 – Case # 9725 Warrant Article #21 (General), July 21, 2020; Brookline Annual Town Meeting of May 19, 2022 – Case # 10315 Warrant Articles # 25 and 26 (Zoning).

⁵⁶ AGO's Straw Proposal Comments at 13.

⁵⁷ Massachusetts Constitution, Article 89 of the Articles of Amendment; *see also* G.L. c. 43B § 13.

⁵⁸ AGO's Straw Proposal Comments at 13.

Additionally, *An Act Driving Clean Energy and Offshore Wind* (the “Clean Energy Act”),⁵⁹ which Governor Charlie Baker signed into law on August 11, 2022,⁶⁰ does not alter the requirement that DOER must promulgate the Specialized Opt-in Code in accordance with the Climate Roadmap Act. Section 84 of the Clean Energy Act directs DOER to establish a “demonstration project” in which cities and towns may:

“[A]dopt and amend general or zoning ordinances or by-laws that require new building construction or major renovation projects to be fossil fuel-free, and enforce restrictions and prohibitions on new building construction and major renovation projects that are not fossil fuel-free, including through the withholding or conditioning of building permits”⁶¹

Notably, however, pursuant to the Clean Energy Act, DOER “shall approve not more than 10 applications for participation in the demonstration project.”⁶² Therefore, while this demonstration project provides an additional option available to 10 municipalities, the law makes clear that it does not “inhibit or interfere with [DOER’s] obligation to promulgate” the Specialized Opt-in Code, nor does it limit the ability for any municipality to opt in to the code.⁶³ Furthermore, the law does not “interfere with [DOER’s] authority to set restrictions or limitations on fossil fuel

⁵⁹ See H. 5060 *An Act Driving Clean Energy and Offshore Wind*, 192nd General Court (awaiting assignment of Session Law designation).

⁶⁰ Sabrina Shankman, *Baker Signs Major Climate Bill into Law*, Boston Globe, August 11, 2022, <https://www.bostonglobe.com/2022/08/11/science/baker-signs-major-climate-bill-into-law/>.

⁶¹ Clean Energy Act, § 84(b). Any restrictions and prohibitions adopted pursuant to Section 84 “shall not apply to research laboratories for scientific or medical research, or to hospitals or medical offices regulated by the department of public health as a health care facility.” *Id.*

⁶² *Id.* at § 84(c). A municipality may not apply for acceptance into the demonstration project until it has received local approval and has submitted a home rule petition to the Massachusetts General Court. *Id.*; see Massachusetts Constitution, Article 89 of the Articles of Amendment.

⁶³ *Id.* at § 84(d).

construction necessary to meet [DOER's] obligation to promulgate the specialized stretch energy code's net-zero building performance standards and definition of net-zero building"⁶⁴

B. The AGO Supports DOER's Actions to Strengthen the Updated Stretch Energy Code and to Establish the Specialized Opt-in Code and Encourages DOER to Consider Additional Improvements to the Specialized Opt-in Code.

As an initial matter, the AGO reiterates its support for allowing municipalities to choose to adopt a Specialized Opt-in Code that includes all-electric requirements.⁶⁵ As DOER's Summary states, "Buildings reliant on fossil fuel combustion equipment have no clear path to zero emissions, while electrically heated buildings do due to the steady increase in renewable and clean energy sources on the ISO-NE electric grid."⁶⁶ In finalizing the Specialized Opt-in Code, which must be designed to achieve compliance with the Commonwealth's greenhouse gas emissions limits, DOER should maximize the code's building electrification requirements.

DOER has already taken important steps in developing and enhancing the proposed regulations. As described in the draft regulations webinar,⁶⁷ taking into account public comments on key issues, DOER made several updates to the Straw Proposal in drafting the Updated Stretch Energy Code and Specialized Opt-in Code language. The AGO supports several changes that DOER has made to improve the codes and offers some additional recommendations on how the final code language can be further strengthened.

⁶⁴ *Id.*

⁶⁵ AGO's Straw Proposal Comments at 16. To be clear, the demonstration project established by the Clean Energy Act, which is only available to 10 municipalities, does not alleviate the need for a strong Specialized Opt-in Code available to all municipalities across the Commonwealth.

⁶⁶ DOER Summary at 9.

⁶⁷ *See supra* note 9.

First, the Updated Stretch Energy Code imposes new requirements for existing buildings.⁶⁸ Under the proposed residential code, additions greater than or equal to 100% of the size of the existing conditioned floor area or 1,000 sf must meet lower maximum HERS requirements.⁶⁹ Alterations for which over 50% of the home is renovated and reconfigured or the improvements cost more than 50% of the value of the existing home must do the same.⁷⁰ Under the proposed commercial code, additions greater than or equal to 100% of the size of the existing building or 20,000 sf must comply with the applicable Updated Stretch Energy Code requirements for that building type and size.⁷¹ Additionally, alterations and buildings that undergo a change of use or occupancy must follow the Updated Stretch Energy Code Prescriptive Pathway, with an allowance for a 10% reduced envelope requirement.⁷²

The AGO supports these new requirements in the Updated Stretch Energy Code and further recommends that DOER likewise include requirements for existing buildings in the Specialized Opt-in Code. As noted in the Decarbonization Roadmap Building Sector Technical Report, the structures that exist today will still represent over 80% of the total building stock by 2050, and addressing these existing buildings is central to meeting the Commonwealth’s decarbonization targets.⁷³ Additionally, as the CECF explains, “[f]or existing buildings, the new Mass Save Three-

⁶⁸ DOER Summary at 4-5, 7-8; DOER Draft Regulations Webinar at 14-15.

⁶⁹ 225 CMR 22 § R502.1.1; DOER Summary at 4-5; *see* Table *supra* at 4. Under both the residential and commercial codes, additions are not currently required to comply with the Stretch Energy Code. DOER Draft Regulations Webinar at 14-15.

⁷⁰ 225 CMR 22 § R503.1.5; DOER Summary at 5; *see* Table *supra* at 4.

⁷¹ 225 CMR 23 § C502.1; DOER Summary at 7.

⁷² 225 CMR 23 §§ C503.1, C505.1; DOER Summary at 8.

⁷³ *Building Sector Report: A Technical Report of the Massachusetts 2050 Decarbonization Roadmap Study*, December 2020, at 42, <https://www.mass.gov/doc/building-sector-technical-report/download>.

Year Energy Efficiency Plans include substantial incentives for building owners and operators to invest in measures that tighten building envelopes.”⁷⁴ Where the Commonwealth’s policies require the decarbonization of existing buildings, these buildings should be included in the Specialized Opt-in Code.

In addition to supporting requirements for existing buildings, the AGO supports the inclusion of a Zero Energy Pathway in the Specialized Opt-in Code. While the Straw Proposal included all-electric, mixed-fuel, and Passivehouse compliance pathways for residential and commercial buildings,⁷⁵ the Zero Energy Pathway includes not only strong energy efficiency requirements but also requires a building to be designed, using renewable energy generation, to result in net zero energy consumption over the course of a year.⁷⁶ Meeting the Commonwealth’s greenhouse gas emissions reduction requirements will require a significant increase in renewable energy generation—for example, the Commonwealth’s All Options Decarbonization Pathway calls for a significant increase in rooftop solar by 2050⁷⁷—and buildings following the Zero Energy Pathway can help meet this goal.

Moreover, the AGO supports allowing commercial Zero Energy Buildings to utilize community-based renewable energy generation to meet the net zero energy consumption requirement. While the definition of Zero Energy Building in the commercial code would allow a building to achieve net zero energy using onsite or community-based renewable energy

⁷⁴ CECP at 47.

⁷⁵ See Straw Proposal at 25, 42.

⁷⁶ 225 CMR 22 § 101.3; 225 CMR 23 § CC102.

⁷⁷ *Energy Pathways to Deep Decarbonization: A Technical Report of the Massachusetts 2050 Decarbonization Roadmap Study*, December 2020, at 113, <https://www.mass.gov/doc/energy-pathways-for-deep-decarbonization-report/download>.

generation,⁷⁸ the DOER Summary states in contrast, “zero energy may be demonstrated *only with on-site generation* (typically solar PV).”⁷⁹ The DOER Summary also states, “Where on-site renewable energy generation is not practical, or is limited relative to the building load and available solar access, there is still potential for siting additional renewable energy in the community, however as renewable sites and procurements become distant from the building site it stretches the feasibility of local building officials to regulate them under the energy code.”⁸⁰ To the extent there is a feasible path to implementation, the commercial Specialized Opt-in Code should allow community-based renewable energy generation as an option. The AGO recommends that DOER maintain the current definition of Zero Energy Building and provide further guidance regarding how buildings can achieve compliance with the Net Zero Pathway using community-based renewable energy.

With the addition of a Zero Energy Pathway in the Specialized Opt-in Code, DOER also included in the residential code a requirement that new homes over 4,000 sf follow either the All-Electric Pathway or Zero Energy Pathway,⁸¹ thus eliminating the Mixed-Fuel Pathway as an option for such homes.⁸² The AGO supports this requirement and further recommends that the Specialized Opt-in Code require other building types, in addition to homes over 4,000 sf, to follow the All-Electric Pathway or Zero Energy Pathway. While the AGO recognizes that DOER’s analysis may

⁷⁸ 225 CMR 23 § CC102.

⁷⁹ DOER Summary at 13-14 (emphasis added).

⁸⁰ *Id.* at 9.

⁸¹ 225 CMR 22 § RC101.2; DOER Summary at 10. This is a new requirement that was not included in the Straw Proposal. See DOER Draft Regulations Webinar at 17.

⁸² While the Zero Energy Pathway does not eliminate the use of fossil fuels, the AGO supports additional requirements for buildings to follow either the All-Electric or Zero Energy Pathways versus also including a Mixed-Fuel Pathway as an option.

support exemptions for certain building types, the Specialized Opt-in Code should require All-Electric or Zero Energy Buildings as the baseline for the Commonwealth's highest tier energy code, not only as a carve-out for one building type.

Finally, the AGO reiterates that the Commonwealth should pursue its climate goals in an equitable manner that protects all consumers, especially low-income and environmental justice communities.⁸³ As the Updated Stretch Code and Specialized Opt-in Code are finalized and implemented, DOER should consider ways in which it can monitor and report on community impacts, including impacts with respect to greenhouse gas emissions reductions, construction and life-cycle cost impacts, and housing and commercial development.

IV. CONCLUSION

The AGO appreciates DOER's efforts in developing its draft Updated Stretch Energy Code and draft Specialized Opt-in Code. The AGO respectfully requests that DOER incorporate these comments as it finalizes the codes.

Respectfully submitted,

MAURA HEALEY
ATTORNEY GENERAL

By: /s/ Kelly Caiazzo
Rebecca Tepper
Chief, Energy and Environment Bureau
Kelly Caiazzo
Special Assistant Attorney General
Massachusetts Attorney General
Office of Ratepayer Advocacy
One Ashburton Place
Boston, MA 02108
(617) 727-2200

⁸³ AGO's Straw Proposal Comments, at 15.