



August 12, 2022

Massachusetts Stretch Energy Code Development 2022: Public Comment Process

BUILDING CODE COMMENTS

Massachusetts Department of Energy Resources

I. Overview

Arcadia is building the software necessary for Massachusetts to maximize the benefits of clean energy. Today, customers face a potentially overwhelming assortment of energy technologies – ranging from energy efficiency and renewable energy offerings to battery storage and electric vehicles – all of which have unique capabilities, costs, and user experiences. Arcadia’s software makes it possible for energy technology providers to improve customer engagement and move clean energy forward by enabling simple user experiences that also deliver customer savings. Arcadia’s software has a track record of successfully serving the community solar industry, for which Arcadia currently manages subscribers to more than 750 MW of solar generation nationwide - making it the largest manager of residential community solar subscribers in the United States.

Arcadia appreciates the opportunity to provide additional comments to the Department of Energy Resources (DOER) as part of the Public Comment process for the Draft Stretch Code Proposal.

Massachusetts is a national leader in establishing robust building energy codes, and the state’s emphasis on continuous improvement and incorporation of stakeholder feedback throughout this process is commendable. This stakeholder process coupled with DOER’s commitment to develop robust standards will ensure a long-term sustainable building sector for all Massachusetts residents.

If DOER incorporates the proposed changes to the draft stretch code set out below, the stretch code could become another tool for making distributed generation resources more accessible and available to Massachusetts customers as the Commonwealth strives to achieve its ambitious greenhouse gas reduction goals.

II. General summary of comments

Our comments are divided into three sections below. The first is an outline of our comments and is followed by our proposed amendments to the residential and commercial opt-in stretch codes. Lastly we have included a necessary clarification for DOER staff’s summary document.

III. Outline of recommendations and clarifications

A. DOER should amend the code to clarify that community-based renewable energy generation explicitly means the state’s SMART community solar program.

- a. By increasing clarity, building developers and owners will fully understand that participation in the SMART program, or a successor, is allowed. This will decrease customer confusion and minimize the probability of customer disputes and complaints.

B. DOER should amend the code to allow community-based renewable energy generation to count as a compliance option for residential buildings.

- a. Residential buildings should have access to the same suite of renewable energy compliance options as commercial buildings – on-site solar and SMART community solar program participation
- C. DOER should amend the code to require that rooftop solar developers provide residential customers with anticipated, up-front estimates of cost-savings with transparent data illustrating anticipated utility bill savings achieved from their installed rooftop solar systems.**
 - a. Providing anticipated, up-front savings tailored for each customer is far more accurate than simply using generic estimates based on system size or other unrefined factors. This consumer protection measure increases transparency around total system costs and savings, and educates and informs customers about anticipated long-term energy usage and associated savings.
- D. DOER should amend the code to require rooftop solar providers offering rooftop system leases or power purchase agreements (PPAs) to provide residential customers with ongoing, monthly reports illustrating utility bill savings from their rooftop systems.**
 - a. This customer protection ensures participating customers continually receive savings on their monthly energy bills.
- E. Verifying participation in community-based renewable energy programs can be a streamlined, simple process that minimizes administrative burden.**
 - a. Simple processes may be implemented to verify that a customer is participating in a SMART community solar project. For example, the customer can share their signed subscriber agreement or disclosure form, which is provided by DOER.

IV. Recommended amendments to Stretch Codes

This section includes a summary of Arcadia’s recommended amendments as well as our proposed language. Proposed new language is identified in red and underlined.

We recommend the following targeted amendments to the Residential Low-Rise Stretch Energy Code and Specialized Opt-in Code Language and the Massachusetts Municipal Opt-In Specialized Code 2025, respectively.

A. DOER should amend Commercial code to clarify that community-based renewable energy generation means the state’s SMART program.

Summary: To ensure greater clarity regarding permitted community renewable energy generation options facilitating net zero energy consumption in Zero Energy Buildings, we recommend that the definition for “Zero Energy Building” under Section CC102.1 of the Commercial Stretch code explicitly clarify that “community-based renewable energy” is that provided through the *Solar Massachusetts Renewable Target* program, also known as the “SMART” program, or a corresponding successor program. This clarification will help ensure that developers subscribe buildings to the Commonwealth’s community solar program and will avoid confusion regarding eligible energy offerings.

Recommended amendment: Section CC102, page 38:

ZERO ENERGY BUILDING. A building which through a combination of highly energy efficiency design and onsite or community-based renewable energy generation, such as project

subscription to a Community Shared Solar Tariff Generation Unit through the Solar Massachusetts Renewable Target (SMART) Program, 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.¹

- B. DOER should amend the residential low-rise code to allow residential buildings to access community-based renewable energy as a compliance option, so these customers can have the same compliance opportunities as commercial customers.**

Summary: As indicated in our initial comments, residential buildings should have the option of complying through participation in a community-based renewable energy program. This is particularly valuable for buildings for which on-site solar is not feasible or affordable, especially for low income customers and housing. We recommend the following modifications to the draft:

Recommended amendments: Section RC101.3

ZERO ENERGY BUILDING. A building which through a combination of highly energy efficiency design and onsite or community-based renewable energy generation, such as project subscription to a Community Shared Solar Tariff Generation Unit through the Solar Massachusetts Renewable Target (SMART) Program, 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.

- C. DOER should amend the code to require that rooftop solar developers provide residential customers with anticipated up-front cost-savings estimates with transparent data illustrating anticipated utility bill savings achieved from their installed rooftop solar systems.**

Summary: We anticipate and hope that the updated Stretch Codes will facilitate additional rooftop solar development. Therefore, we want to make sure that consumer protection enhancement is front and center. As such, we recommend that any future update to the Stretch Codes or the SMART Consumer Protection & Disclosure Forms for rooftop solar systems include these proposals.

This protection is already utilized in California today. For background, in 2018, the California Public Utilities Commission (CPUC) adopted a suite of forward-looking consumer protection measures for rooftop solar customers throughout California.² Among the approved provisions was a requirement that rooftop solar developers illustrate anticipated up-front cost savings for

¹ MA 2023 Commercial Stretch Code and Specialized Opt-in Code (IECC2021 with MA Amendments) DOER Draft 6-24-22. New Specialized Code: MA Municipal Opt-in Specialized Code Amendments. Pg. 38. Accessed at

<https://www.mass.gov/doc/225-cmr-2200-commercial-specialized-stretch-energy-code-redline-june-24-2022-0/download>

² State of California Legislative Information. Business and Professions Code - BPC. Division 3. Professions and vocations Generally [5000 - 9998.11] (heading of Division 3 added by Stats. 1939, Ch. 30.) Chapter 9. Contractors [7000 - 7191] (Chapter 9 added by Stats. 1939, Ch. 37.)

https://leginfo.ca.gov/faces/codes_displaySection.xhtml?lawCode=BPC§ionNum=7169.

customers based on usage data sourced from at the utility, providing transparent estimates to help educate customers and facilitate their informed financial decisions and commitments pertaining to their investments in rooftop solar systems. For convenient reference, this California legislation is included in the Appendix I.

We propose that the Specialized Opt-In Code incorporate a similar consumer protection provision requiring that rooftop solar developers provide customers with up-front cost savings estimates, reflective of applicable anticipated utility tariff/rate fluctuations exhibited on a monthly basis, to ensure customers are adequately equipped to make informed decisions and provide additional consumer protection at the point-of-sale. Additionally, customer insight into monthly savings afforded by rooftop systems can promote informed behavioral changes to reduce energy use during peak months to optimize solar savings, facilitating more widespread behaviors supporting demand-side management and peak load reductions over time. In turn, additional demand-side management reduces total system costs and greenhouse gas emissions for every ratepayer, furthering the stretch code objectives.

If DOER chooses not to take this action through the code, it should review and improve the customer disclosure requirements applicable to the SMART Program.

Recommended amendments: Create a new section for consumer protections:

SECTION RC106 CONSUMER PROTECTIONS

RC106.1 General.

DOER, shall develop and make available a “solar energy system disclosure document” or documents that provide a consumer, at a minimum, accurate, clear, and concise information regarding the installation of a solar energy system, total costs of installation, calculation of anticipated utility cost savings that includes the customer’s utility tariff rate, their specific energy usage history, and solar energy system size.

(b) On or before July 1, 2023, DOER, shall develop, and make available on its website the disclosure document described in subdivision (a) that a solar energy system company shall provide to a consumer prior to completion of a sale, financing, or lease of a solar energy system. The “solar energy system disclosure document” shall be printed on the front page or cover page of every solar energy contract. The “solar energy system disclosure document” shall be printed in boldface 16-point type and include the following types of primary information:

(1) The total cost and payments for the system, including financing costs.

(2) Information on how and to whom customers may provide complaints.

(3) The consumer’s right to the applicable cancellation period pursuant to applicable state and federal law.

- D. DOER should amend the code to require rooftop solar providers offering rooftop system leases or power purchase agreements (PPAs) provide residential customers with ongoing, monthly reports illustrating utility bill savings achieved from their rooftop systems.**

Summary: In a similar vein to our comment in proposal C above, we understand this solution may be best suited for implementation through the SMART Program. As such, we suggest that any future update to the SMART Consumer Protection & Disclosure Forms for rooftop solar systems include adopting this recommendation.

DOER should update the Stretch Codes to require that rooftop solar providers offering rooftop system leases or power purchase agreements (PPAs) provide residential customers with ongoing, monthly reports illustrating utility bill savings from their rooftop systems.

In addition to an up-front savings estimate aligned with the California model, we also propose revising the Specialized Opt-In Code to require that developers leasing rooftop solar to residential customers or selling to residential customers through PPAs provide applicable customers with accurate data illustrating the ongoing monthly utility bill savings achieved from their leased rooftop solar systems/PPAs. This data should be based on actual system production and actual energy usage and utility bills. This provision would facilitate increased transparency and consumer protections for participating rooftop solar customers, ensuring that they are continually informed about their clean energy usage, consumption, and monthly savings from participating in rooftop solar through leases or PPAs.

Additionally, by requiring that rooftop solar developers provide data illustrating customers' ongoing savings, participating consumers can rest assured that they are continually and transparently informed about their energy usage and savings. Requiring monthly reports illustrating utility bill savings is a proactive program provision that would ensure that consumers remain fully cognizant of the financial impacts of their rooftop solar leases or PPA arrangements.

V. Clarification of misunderstanding in Summary document

- A. Verifying community-based renewable energy participation is simple and can minimize administrative burden.**

Section 4.2 of the Summary of Proposed New 225 CMR 22.00 and 23.00 suggests it is unfeasible for local building officials to regulate Residential Low Rise building participation in community renewable generation:

“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.”

To the contrary, there are several straightforward, ‘light touch’ solutions by which local building officials can readily regulate and verify such participation with little to no administrative burden. Notably, eligible customers should have the option of either providing an attestation that they participate in the SMART program or to provide a copy of their SMART subscription agreement. As such, certification methods should include the following options:

- a. Attestation form certifying that the building sites renewable energy from a SMART project – this may be done on an official template provided by DOER; or
- b. Copy of the applicable account holder’s subscription agreement or disclosure form governing the building account’s subscription to a SMART project.

Customer subscription agreements or disclosure forms are both legally binding documents illustrating a given customer’s verified subscription to a SMART project in their utility territory; administrative review of either document poses a solution likely easier than the administratively burdensome process required to regularly verify the physical presence of on-site systems.

VI. Conclusion

We appreciate the opportunity to provide these comments and look forward to our continued work with DOER. Please contact James Feinstein at James.Feinstein@arcadia.com or 202 999 8916 if you would like to discuss these matters further.

Sincerely,



James Feinstein
Senior Policy Manager
Arcadia

APPENDIX I - California State Code requiring accurate savings for rooftop solar systems

BUSINESS AND PROFESSIONS CODE - BPC

DIVISION 3. PROFESSIONS AND VOCATIONS GENERALLY [5000 - 9998.11]

(Heading of Division 3 added by Stats. 1939, Ch. 30.)

CHAPTER 9. Contractors [7000 - 7191] (Chapter 9 added by Stats. 1939, Ch. 37.)

ARTICLE 10. Home Improvement Business [7150 - 7170] (Article 10 added by Stats. 1961, Ch. 1021.)

7169.

(a) The board, in collaboration with the Public Utilities Commission, shall develop and make available a “solar energy system disclosure document” or documents that provide a consumer, at a minimum, accurate, clear, and concise information regarding the installation of a solar energy system, total costs of installation, anticipated savings, the assumptions and inputs used to estimate the savings, and the implications of various financing options.

(b) On or before July 1, 2018, the board, in collaboration with the Public Utilities Commission, shall develop, and make available on its internet website the disclosure document described in subdivision (a) that a solar energy system company shall provide to a consumer prior to completion of a sale, financing, or lease of a solar energy system. The “solar energy system disclosure document” shall be printed on the front page or cover page of every solar energy contract. The “solar energy system disclosure document” shall be printed in boldface 16-point type and include the following types of primary information:

- (1) The total cost and payments for the system, including financing costs.
- (2) Information on how and to whom customers may provide complaints.
- (3) The consumer’s right to the applicable cancellation period pursuant to Section 7159 of the Business and Professions Code.

(c) At the board’s discretion, other types of supporting information the board and the commission deem appropriate or useful in furthering the directive described in subdivision (a) may be included in the solar energy disclosure document following the front page or cover page, including, but not limited to:

- (1) The amounts and sources of financing obtained.
- (2) The calculations used by the home improvement salesperson to determine how many panels the homeowner needs to install.
- (3) The calculations used by the home improvement salesperson to determine how much energy the panels will generate.
- (4) Any additional monthly fees the homeowner’s electric company may bill, any turn-on charges, and any fees added for the use of an internet monitoring system of the panels or inverters.

- (5) The terms and conditions of any guaranteed rebate.
 - (6) The final contract price, without the inclusion of possible rebates.
 - (7) The solar energy system company's contractor's license number.
 - (8) The impacts of solar energy system installations not performed to code.
 - (9) Types of solar energy system malfunctions.
 - (10) Information about the difference between a solar energy system lease and a solar energy system purchase.
 - (11) The impacts that the financing options, lease agreement terms, or contract terms will have on the sale of the consumer's home, including any balloon payments or solar energy system relocation that may be required if the contract is not assigned to the new owner of the home.
 - (12) A calculator that calculates performance of solar projects to provide solar customers the solar power system's projected output, which may include an expected performance-based buy-down calculator.
- (d) A contract for sale, financing, or lease of a solar energy system and the solar energy system disclosure document shall be written in the same language as was principally used in the oral sales presentation made to the consumer or the print or digital marketing material given to the consumer.
- (e) For solar energy systems utilizing Property Assessed Clean Energy (PACE) financing, the Financing Estimate and Disclosure form required by subdivision (b) of Section 5898.17 of the Streets and Highways Code shall satisfy the requirements of this section with respect to the financing contract only, but not, however, with respect to the underlying contract for installation of the solar energy system.
- (f) The board shall post the PACE Financing Estimate and Disclosure form required by subdivision (b) of Section 5898.17 of the Streets and Highways Code on its internet website.
- (g) For purposes of this section, "solar energy system" means a solar energy device to be installed on a residential building that has the primary purpose of providing for the collection and distribution of solar energy for the generation of electricity, that produces at least one kW, and not more than five MW, alternating current rated peak electricity, and that meets or exceeds the eligibility criteria established pursuant to Section 25782 of the Public Resources Code.
- (h) This section does not apply to a solar energy system that is installed as a standard feature on new construction.

(Amended by Stats. 2021, Ch. 188, Sec. 11. (SB 826) Effective January 1, 2022.)³

³ State of California Legislative Information. Business and Professions Code - BPC. Division 3. Professions and vocations Generally [5000 - 9998.11] (heading of Division 3 added by Stats. 1939, Ch. 30.) Chapter 9. Contractors [7000 - 7191] (Chapter 9 added by Stats. 1939, Ch. 37.) https://leginfo.ca.gov/faces/codes_displaySection.xhtml?lawCode=BPC§ionNum=7169.