



## Town of Bridgewater Energy Committee

May 16, 2023

6:30 PM

The meeting will be held virtually via Zoom.

To attend via video, click on the link below:

<https://us06web.zoom.us/j/83357786790>

To attend via phone, dial: 1(646) 876-9923

**Meeting ID: 833 577 867 90**

### MEETING AGENDA

**Disclosure:** Pursuant to Section 20 of Chapter 20 of the Acts of 2020, An Act Relative to Extending Certain Covid-19 Measures Adopted During the State of Emergency, and the March 31, 2025, extension granted by Chapter 22 of the Acts of 2022, this meeting for the Town of Bridgewater will be fully remote and accessible to the public through remote participation to the greatest extent possible. No in-person attendance is permitted. Citizens who wish to tune in to the meeting may do so via Zoom.

- A. Call to Order**
- B. Approval of Meeting Minutes**
  - a) April 18, 2023 Meeting Minutes
- C. Public Comment**
- D. Old Business**
  - a) Update on Committee Votes from Prior Meeting
  - b) Review and Discussion of Draft Reports
  - c) New Fire Station Update
- E. New Business**
- F. Additional Items for Discussion**
- G. Adjournment of Meeting**



## Energy Committee

April 21, 2023

Bridgewater Town Council  
Academy Building  
Bridgewater, MA 02324

Greetings Councilors,

The Energy Committee met on April 18<sup>th</sup> and considered several items. Among them was a discussion of opportunities to reduce energy consumption through zoning. The Committee voted unanimously to recommend the Town Council adopt Specialized Code = IECC 2021 with MA amendments + Stretch Code amendments + Specialized Code appendices amendments (225 CMR 22.00 (appx. RC) and 225 CMR 23.00 (appx. CC)) by January 1, 2024. <https://www.mass.gov/info-details/building-energy-code>

**Explanation:** The Massachusetts Department of Energy Resources (DOER) website states “*the purpose of 225 CMR 22.00 and 23.00 including Appendices RC and CC, also referred to as the Specialized Energy Code is to provide a more energy efficient and low greenhouse gas emissions alternative to the Stretch Energy Code or the baseline Massachusetts Energy Code, applicable to the relevant sections of the building code for both new construction and existing buildings.*” <https://www.mass.gov/info-details/building-energy-code#building-energy-code-adoption-by-municipality->

Recent communications with Ms. Lisa Sullivan, DOER Green Communities Southeast Regional Coordinator, indicated DOER has contracted a code consultant to provide support for towns who wish to adopt the more advanced code. The Energy Committee encourages the Town Council, Town Manager, and Community and Economic Development Office to access this consultant for further clarification and consideration of the recommendation of the Energy Committee.

**Background:** As a designated Green Community Bridgewater must adhere to the Massachusetts Stretch Building Code under the Green Communities Act passed by the Legislature and signed into law in 2008.

The above specialized Code was developed by the Commonwealth in 2022 as an option for municipalities. Adoption of the Specialized Code would require builders, for both new construction and major renovations, to meet high performance standards, prepare buildings for all-electric heating and cooling, and make parking ready for electric vehicle chargers. This energy code is based in part on an international code called P.H.I.U.S (<https://www.phius.org>). A limited comparison of the value of adopting this zoning’s is shown in the attached figures.

P.H.I.U.S is a non-profit 501(c)(3) organization committed to decarbonizing the built environment by making high-performance passive building the mainstream market standard. Its website states “We train and certify professionals, maintain, and update the Phius climate-specific passive building standard, certify and quality assure passive buildings, certify high-performance building products, and conduct research to advance high-performance building. Phius provides a variety of training options, from professional credentialing courses to continuing education.” The new apartment building at the McElwain School development adhered to P.H.I.U.S principles and scored extremely well in its energy assessment.

Note the Special Code includes requirements for energy efficiency in new commercial buildings and Municipal Buildings such as the New Fire Station or reuse of Town House.

***Bridgewater:***

*Preserving Our Past. Enriching Our Present. Building Our Future.*



## Energy Committee

Importantly, adoption of this zoning would further the 2022 Comprehensive Master Plan's goal and recommended *Policy 8.7.1. Commit to environmental sustainability in all Town of Bridgewater policies.*

**DER**  
Massachusetts Department  
of Energy Resources

### Commercial: Base code vs Stretch code in 2024

The 10<sup>th</sup> edition BBRS codes are expected to take effect Jan 1, 2024  
For the energy code these are the similarities and differences:

- Similarities
  - EV ready wiring (10% spaces in base code, 20% for residential and business in Stretch code)
  - Solar ready applies in both for 4 stories or less
  - Air leakage testing required in all new commercial buildings
- Differences in Commercial
  - IECC Prescriptive code with COMcheck allowed in base code
  - Heat or Energy recovery in balanced ventilation required for Stretch code
  - HERS Ratings or TEDI or Passivehouse required in Stretch code for Multi-family
  - TEDI or ASHRAE modelling required for all commercial over 20,000 sf.

### Specialized Code: Schools, Offices, similar uses

The diagram illustrates the requirements for specialized codes. On the left, a grey box lists the requirements for stretch code: TEDI limits, Air infiltration, Ventilation energy recovery, and Thermal bridging. Below this box is the text 'Meet all the requirements of stretch code'. To the right of this box is a plus sign. Further right is a vertical stack of three blue boxes representing specialized code options, separated by 'or' text. The first option is 'All electric systems'. The second option is 'Rooftop solar where feasible and electric readiness'. The third option is 'Net Zero energy on-site with all electric systems Or electric readiness if using gas'.

The Energy Committee looks forward to your consideration of this opportunity.

Respectfully submitted,

Carlton D. Hunt, PhD.  
Chair, Bridgewater Energy Committee  
Bridgewater, MA 02324  
Email: [Carlton@thehunts.org](mailto:Carlton@thehunts.org)  
Cell Phone: 508 243 0638

CC: Michael Dutton, Town Manager  
Robert Rulli, CED Director

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## Energy Committee

April 21, 2023

Mr. Michael Dutton  
Bridgewater Town Manager  
66 Central Sq.  
Bridgewater, MA 02324  
Subject: Consultant to Develop a Townwide Energy Strategy

Greetings,

The Energy Committee met on April 18<sup>th</sup> and considered several items. I briefed the Committee on our April 5<sup>th</sup> conversations especially those concerning deployment of alternative energy sources on municipal and Regional School District property. I briefly discussed my research on potential solar facilities on Bridgewater's public property by applying the guidance provided by the University of Massachusetts Extension Service. I have recently been able to evaluate the locations of three-phase lines in Bridgewater, these line's host capacity, and rough distance from the many potential locations I have identified for solarization.

I have also developed a simple way to characterize the most likely (best) locations for comparison purposes. Based on the Committee's discussions, I asked for and received a motion recommending you proceed to hire an energy consultant specifically to help formalize and extend my analysis and develop a comprehensive townwide Energy Strategy as suggested by you when we met. The Committee unanimously supported this request and authorized me to send the recommendation to you in hopes we can move this forward quickly per our discussion on the 5<sup>th</sup>.

Given the many facets of this concept, including Town Council considerations and hopefully adoption of the specialized zoning code and need for public outreach on an energy strategy, the Committee requests completion of this exercise by the end of September 2023.

As we previously discussed, I am happy to consult on the procurement and interview process, especially to get feedback on the work I have completed to date. I think it is important that we and possibly the CED staff review the work I have done on the solarization concept. This would help define the scope of services we should request.

The Energy Committee looks forward to your consideration and action regarding this recommendation.

Respectfully submitted,

Carlton D. Hunt, PhD.  
Chair, Bridgewater Energy Committee  
Bridgewater, MA 02324  
Email: [Carlton@thehunts.org](mailto:Carlton@thehunts.org)

CC: Town Council President  
Robert Rulli, CED Director

## NEW FIRE STATION ENERGY TOPICS


Build to PHIUS standards (alternative build to Special Code even if Town Council does not adopt)

As a designated Green Community Bridgewater must adhere to the Massachusetts Stretch Building Code under the Green Communities Act passed by the Legislature and signed into law in 2008. **On top of that is an optional “Special Code” which must be adopted by the Town, in this case the Town Council.**

The Special Code **includes requirements for energy efficiency** in new commercial buildings and **Municipal Buildings** such as the New Fire Station or reuse of Town House.

Current building energy code options are:


- Updated Stretch Code = IECC 2021 with MA amendments + Stretch Code amendments (225 CMR 22.00 and 225 CMR 23.00)
- Specialized Code = IECC 2021 with MA amendments + Stretch Code amendments + Specialized Code appendices amendments (225 CMR 22.00 (appx. RC) and 225 CMR 23.00 (appx. CC)).

 **Commercial: Base code vs Stretch code in 2024**

The 10<sup>th</sup> edition BRS codes are expected to take effect Jan 1, 2024  
For the energy code these are the similarities and differences:

- Similarities
  - EV ready wiring (10% spaces in base code, 20% for residential and business in Stretch code)
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**Specialized Code: Schools, Offices, similar uses**



TEDI limits  
Air infiltration  
Ventilation energy recovery  
Thermal bridging

Meet all the requirements of stretch code

+

All electric systems  
or  
Rooftop solar where feasible and electric readiness  
or  
Net Zero energy on-site with all electric systems  
Or electric readiness if using gas

## FUNDING

Consider Green Communities decarbonization grant.

“Bridgewater can apply for a 200k competitive grant or a multi year decarbonization grant up to \$500k. Not both. The 200k grant, if awarded and finished in 1 year, you could apply in the next calendar year. The decarbonization grant details: Applications will be accepted from municipalities seeking funding for comprehensive building decarbonization projects that extend beyond the typical grant in implementation time and cost. Awards for building decarbonization projects are capped at five hundred thousand dollars (\$500,000), require a minimum twenty-five (25) percent match, must demonstrate reductions in greenhouse gas emissions, and must be completed within three (3) years of grant contract execution. Grant awards in this category are highly competitive and will be limited. Projects that fully replace fossil-fuel fired heating systems are prioritized. Municipalities applying for a building decarbonization grant cannot apply for other projects in this PON. Building decarbonization grant awardees under this PON will be ineligible to apply for competitive grants for two (2) years after award.”

**Municipalities considering applying for building decarbonization projects are highly encouraged to contact their Green Communities Regional Coordinator to discuss potential proposals with DOER staff.**

Lisa Sullivan, former Town employee is the Town’s green Communities Coordinator:  
Sullivan, Lisa M (ENE) [lisa.m.sullivan@state.ma.us](mailto:lisa.m.sullivan@state.ma.us)

### Competitive grant possibilities

#### SECTION 3 – TRADITIONAL CLEAN ENERGY PROJECTS

- High efficiency water heaters, including air-source heat pump, condensing, tankless and indirect All buildings including the Memorial Building if the units are not already the highest efficiency.
- Heating, Ventilation and Air Conditioning (HVAC) Equipment – Energy Star® certified cold climate air or ground-sourced heat pumps using variable speed inverter technology. DOER’s support of fossil-fuel fired heating equipment is limited to infra-red heaters typically used in garage bays. DOER will consider supporting this equipment only if adjacent conditioned space, such as offices, are heated and cooled with air or ground source heat pumps.
  - o High efficiency chillers
    - Repair and/or replacement of non-heating HVAC equipment and controls
    - Building Controls
    - Energy Management Systems – grant application narrative must include a description of staff training Vehicular Efficiency Measures – (see prescriptive measures listed in Section 2 for EV charging stations, EV and hybrid exempt vehicle acquisitions)
  - o Technologies that reduce vehicle fuel use (e.g., anti-idling technologies, add-on electrification technologies). *Check the state contract VEH 102 for information on purchasing idle reduction equipment*
  - o DOER will fund up to 50% of cost for battery electric conversions of new or existing vehicles with a GVWR greater than 8,500 pounds, not to exceed \$7,500
  - o Renewable Energy and Resiliency Projects on Municipal Property

- Solar thermal serving facilities with a year-round hot water heat load
- Air or ground-sourced cold climate heat pumps using variable speed inverter technology
- Anaerobic digestion that uses organic materials (e.g., food waste, agricultural waste) and which meets the Commonwealth of Massachusetts RPS low-emission requirements
- Solar-powered mixers at drinking water or wastewater facilities

**RECOMMENDATIONS:**

Evaluate best grant application approach, competitive or Decarbonization, with inthe project time line and most effective energy consumption approach.

Deploy alternative energy sources on building (small wind, solar) per the Stretch Code

Consider small wind for energy backup situations (night and winter season)

Plan for energy storage on site for backup power outage situations.

Build to PHIUS standards (alternative build to Special Code even if Town Council does not adopt)  
Example is the New Building @ the McElwain School Housing development (HERS Rating is 22!)

Install ground heat pump systems for heating and cooling.

**OTHER NON-ENERGY RELATED GRANT OPPORTUNITIES FOR PROJECT**

Consider applying for CPA funds for the park development as a supplement to trust Funds (assuming the plan is to access those \$'s for the recreation requirement).