



# Sustainability Commission

Applicant Response 7/19/23

## Letter to Zoning Board of Appeals regarding the Groton Farms (500 Main Street) Comprehensive Permit Application

Date: June 22, 2023

To: Groton Zoning Board of Appeals

Dear ZBA members,

In their June 5<sup>th</sup> response to our set of items and suggestions raised on May 17<sup>th</sup> concerning the Groton Farms 40B Permit Application, the Applicant seems to have misinterpreted one of the suggestions we raised, and we would ask that they re-evaluate our input and their response.

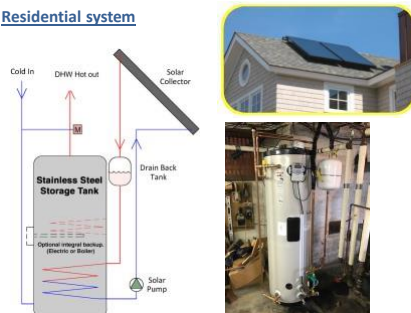
The 6<sup>th</sup> item on our original list stated, *“Solar hot water heating for residential units; can also heat swimming pool with excess solar energy.”*

The Applicant’s response reads, *“Following a discussion with Groton Electric Light Department (GELD) on May 31st, we have determined that solar energy use at the site does not provide enough benefit to warrant the cost of installation and is not being considered currently.”*

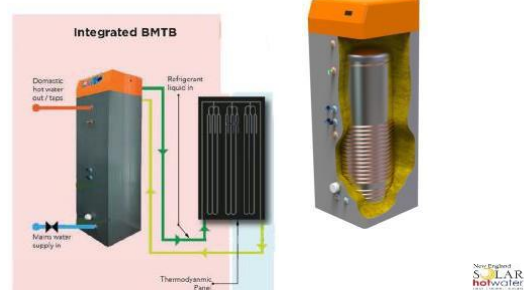
However, please note that solar hot water systems are not used to provide electric power based on the Sun. They are hybrid systems – typically with electric-based heating of some type – to provide hot water for a building. And a solar hot water system would not tie into supplying power into the GELD power grid.

There are two types of solar hot water heater systems: solar thermal systems and solar-assisted heat pump systems and the following two diagrams, presented by New England Solar Hot Water’s President Bruce Dike at our recent *“Sustainability In Groton: What You Can Do”* seminar on June 15<sup>th</sup>, provide a simple overview of the two types.

Residential system



Solar-assisted Heat Pump (SAHP)



Another type of hot water system, that is also far more efficient than traditional electric resistive hot water systems is a hybrid heat pump hot water system which does not use any solar energy in heating the water, but instead extracts heat from the ambient air in the space it is located to heat the water.

Given that, for fiscal reasons concluded in their discussions with GELD, the Applicant is not planning to deploy solar photovoltaic panels for energy creation in this project, we would hope they (and the ZBA) would seriously consider making use of the ample sunlight to which their higher rooftops will have access to help more sustainably heat the water of the residents living at Groton Farms.

We hope the Applicant will take the request under serious advisement. If you have any questions, please reach out to our Commission, and thank you for your consideration.

Respectfully submitted,

*Phil Francisco*, Groton Sustainability Commission Vice-Chair

Dear Mr. Francisco and Members of the Groton ZBA,

We thank you for your note regarding the use of solar hot water heaters at the 500 Main Street Project. We will not commit to using these hot water heaters as part of the 40B Comprehensive Permit Decision. We will work with our mechanical engineer during the preparation of the construction documents to determine if this is a viable option for our project.

Thank you

