



February 6, 2023

Via Email to: kbuckland@wareham.ma.us

Members of the Wareham Planning Board
c/o Kenneth Buckland
Director of Planning and Community Development
Memorial Town Hall
54 Marion Road
Wareham, MA 02571

Re: *Site Plan Review Application, 0 Rt. 25, Parcel ID 115-1000*

Dear Members of the Wareham Planning Board:

I am Director of Energy Storage at Longroad Energy. I hold over 20 years of experience in the power generation industry and have spent the last eight years as either an integrator or developer of energy storage systems.

I understand the Board had raised questions about how the battery energy storage equipment proposed as part of our Wareham solar project will be used and about whether charging from the grid on occasion will be less safe than charging from the PV arrays.

The battery energy storage equipment at the Wareham site was designed to be AC-coupled to the solar PV arrays at the same site for the primary purpose of storing excess solar generation from the PV arrays and discharging it to the grid at more optimal times for the grid. This is a fundamental application for coupling a battery with a PV system. In grids with increasing amounts of solar PV generation, there tends to be an excess amount of electricity generated in the middle of the day when all of the connected PV is generating. Batteries are useful in this regard because they can absorb some of that solar generation and then discharge it later, during an evening load peak to help improve system reliability.

Although this will be the primary purpose of the Wareham battery energy storage equipment, on occasion the battery may be charged from the grid. There may be times where the battery may need to charge from the grid in order to provide support to the grid. These situations should be considered atypical and our best estimate is that they may only occur a few times a year. However, when they do occur, the ability of the system to grid charge to serve the grid appropriately in these situations is instrumental in keeping the grid stable. An example of this may be a situation when the grid operator is predicting a critical morning peak demand period.

The battery energy storage equipment would then likely charge from the grid overnight so that it can discharge during the morning peak to help stabilize the grid during that morning peak.

Regarding the question about safety, there is absolutely no difference in the probability of thermal runaway between grid-charged battery energy storage equipment and solar PV-charged battery energy storage equipment. In either case, the equipment utilizes the same controls, protections, safety features and inverters. Regardless of whether the battery is being charged by the solar PV or the grid, the electricity is the same from a physical perspective since the electricity needs to flow through the same inverter prior to reaching the battery. In fact, I don't believe anyone standing at the project site would be able to discern any physical difference at all when the battery is being charged by the solar PV or the grid.

We appreciate your consideration of our project, and look forward to building a project that will be beneficial for the community.

Best,

Nathan Adams

Nathan Adams
Director, Energy Storage