



LINCOLN PUBLIC SCHOOLS

Buckner M. Creel
Lincoln School Project Manager

January 31, 2024

To: Matina Madrick, Chairperson, School Committee
Parry Graham, Superintendent
From: Buckner Creel

Subject: Solar Project Update #2

Background Acting on behalf of the Town Meeting, the School Committee entered into a power purchase agreement (PPA) and lease with a developer (TotalEnergies) in 2020 to construct and operate a photovoltaic (PV) system. The goal of the PPA is to provide electricity to power the all-electric Lincoln School building at a rate reduced from that charged by Eversource. The original target date for receiving power was October 2022.

The path to system approval has been torturous, requiring Eversource to develop new policies and procedures to handle our large behind-the-meter system, creating significant delays. In many ways, the Eversource process appears to be serial, with no activities occurring in parallel. The discussions about the concept of the physical interconnection of our behind-the-meter project with the Eversource grid began in October 2018 and did not end until the end of 2022. The final engineering of equipment installation, work scheduling, final reviews, etc. resulted in the installation of a recloser at the Lincoln Road connection at the end of last summer. Additionally, the impact of supply chain issues associated with the COVID pandemic hampered rapid construction by adding tremendous friction to the process. One example – the developer ordered two meter sockets in the Fall of 2021; they still haven't received that order. Luckily, Eversource approved an alternate manufacturer late last summer, and the installer found two in stock at some supply house. Nevertheless, the planned PV panels totalling about 1 MW have been installed on the roofs and carport structures, the 500 KW Tesla battery was installed, and the system was tested through a cold commissioning process.

Current situation A diagram showing the location of the ~1,600 panels installed on the roofs is attached. Strings of panels are connected together to inverters which convert the DC power output of the PV panel string to an inverter which converts the DC power to AC for use in the building. Each panel has a module rapid shutdown device, also known as a module level shutdown device (MLSD), which receives a signal from the system central switch to reduce the string voltage for safety purposes in the event of an emergency. MLSDs are not required for parking lot canopies.

TotalEnergies was recently notified by the manufacturer of the inverters (SMA) that the Tigo MLSD installed on all the roof-mounted PV panels is no longer approved for use with the installed SMA inverters. TotalEnergies were about to start the hot commissioning leading to Eversource witness testing when they received this notice.

Accordingly, all of the roof-mounted panels will have to be removed, the MLSD installed on the back of each removed, a different MLSD installed, and the panel reinstalled.

Current work plan TotalEnergies has developed a work plan to minimize the impact on school programs, utilizing the same subcontractor who installed the panels. They have been very respectful of school operational constraints in their work to date, and we anticipate that their plan will continue to respect the school schedule as much as possible.

The current plan calls for mobilizing project support and device delivery beginning next week. Crew mobilization, roof safety railing and safety anchor reestablishment will occur during the week of 12 February. They will start the MLSD replacement during the February Recess week beginning 19 February, should the weather allow for safe work. It is currently too dangerous to work on the roofs. When a window of good weather opens, they will maximize the opportunities presented.

This work will be difficult and time-consuming, and will likely take more than two months to complete. After the MLSDs are replaced, TotalEnergies will have to restart the commissioning process, followed by a period of Eversource witness testing and startup reviews.

The cost of this replacement will be borne completely by TotalEnergies. Please note that the developer has not received any revenue from this project, and will not until the system is approved by Eversource and turned on.

We now anticipate that we will not receive any power from our PPA provider until late May 2024 at the earliest. Once again, system acceptance and grid connection will be completely at the control of Eversource.

As a reminder, the only saving grace is that TotalEnergies receives no revenue until the system is operational, putting significant pressure on them to complete the project.

FY 2022 Budget considerations Some have commented on the dramatic swing in the Lincoln electrical budget amounts from FY 2021 through FY 2023. As the details of the PPA were being finalized in 2021, the Town was provided the opportunity to reduce the PPA rate by paying to TotalEnergies some maintenance items up front, and taking on the payment of the Eversource interconnection fee, which had been built into the original PPA agreement.

After discussing the merits of making these payments with the Town Administrator, the Select Board, the Town Finance Director and the chairperson of the Finance Committee, the sum of \$184,400 was encumbered against the Lincoln electrical utility budget line for FY2022. In July 2022, \$88,784.20 was paid to TotalEnergies, and \$76,215 was paid to Eversource in February 2022. The remaining \$19,100 of the Eversource

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