

To: School Committee
From: Lemma Jn-baptiste, Director of Business & Finance
Tom Philbin, Town of Westwood Energy Manager
Date: June 9, 2022
RE: Solar Canopies and Electric Vehicle Charging

At this month's meeting we are bringing forward two proposals for Green Initiatives that would impact Westwood facilities. Both proposals address the Infrastructure for the Future district priority, as part of the WPS Strategy for District Improvement. They are also both fiscally responsible proposals.

Solar Canopies

In partnership with Ameresco, which has previously invested \$1.7M on rooftops in Westwood (High School, Martha Jones, Downey, and Thurston), the Westwood Schools has an opportunity to pursue a new Solar PV project via the installation of solar canopies in the High School parking lot. Ameresco was selected as a partner through an open bidding process in 2017 and the Town signed a Power Purchase Agreement (PPA) with them to implement solar in Westwood. The solar work contemplated in this memo would be accomplished through this existing PPA contract that has been reviewed and approved by the Town Counsel and Select Board.

This project would complement previous rooftop solar installations that generated over 663,000 KWh in electricity for the Westwood Schools in calendar year 2021. The district has benefited from these prior projects, which generated electric credits of \$39,784 in calendar year 2021 and reduced utility bills at the schools by this amount. In addition, the Westwood Schools benefited from a PPA for an offsite solar installation in Woburn, which generated nearly 2 million KWh and an estimated revenue of \$52,598 for the schools in calendar year 2021. Now that this Woburn revenue stream is established, the revenue can be used to offset utility costs in the district budget.

The High School solar canopy project is expected to generate at least 680,000 KWh per year. It would allow the Westwood Schools to reduce its dependence on non-renewable energy, generate net budget savings in the short term, and offset an anticipated spike in the school electric bills in the long term, protecting the district from making difficult decisions in future budget cycles.

For context on the financials it is important to note that the Town of Westwood, including the Westwood Schools, recently secured a five-year fixed-rate electric supply contract with Constellation Energy for a cost of 9.9 cents per KWh. The current market rate is approximately 15 cents per KWh. The Westwood Schools have been protected from the recent spike in the market rate due to our fixed price contract, but we should anticipate a significant spike in electricity costs when this contract expires on December 31, 2026 (during the FY'27 budget year). This will impact our budget soon after the Westwood Schools demand for electricity increases (in late FY'24 or early FY'25) due to the opening of the all-electric Hanlon-Deerfield

school. Maximizing our renewable energy sources (and conservation efforts) at this time could help us prepare for the FY'27 budget cycle, which is only four years away.

The High School solar canopy project would take advantage of the Massachusetts solar incentive program, known as "SMART". For this program, timing is everything, and the sooner the application is submitted, the higher the solar incentive value. The first phase for the maximum incentives is over, and we have a short window now to enter the second phase.

Solar canopies in school parking lots have been implemented in Wayland, Natick and Stonehill and numerous other facilities with success. These districts did not observe a noteworthy increase in accidents or loss of parking spaces, and the design of the canopies has improved in recent years so that rainwater is channeled appropriately and ice formation is controlled. The canopies would lessen snow removal needs and provide shade and protection from rain for both vehicles parked during the day and for any events such as Westwood Day that occur in the parking lot.

Ameresco is preparing a proposal that will provide illustrations of the proposed solar canopies, which would be positioned in the High School student and staff parking lot, in the rear of the school. We also have an opportunity to place solar canopies in the bus parking lot, which is adjacent to the pool entrance. This would be an optional addition.

Ameresco is responsible for submitting the project into the SMART program to obtain the optimal incentive value for the project. Ameresco is also responsible for all costs and labor to permit, interconnect, engineer, procure, and construct the solar projects. All permitting and interconnection approvals will be completed prior to construction commencement. Once the system is operational, Ameresco will guarantee performance of the solar system throughout the 20-year project life.

As mentioned above, the "Phase 2" solar would use our existing PPA with Ameresco which was developed as a part of a bidding process at the start of Phase 1. In addition to the High School parking lot, Phase 2 would include a solar garage behind Town Hall and the Police Station, an expansion of the roof installation at Thurston and canopies at the Senior Center. With all of the Phase 2 components, the combined solar output in the Town would approach 90+ percent of the Town electric consumption.

Already, the solar output from arrays that are on rooftops in the Westwood Schools and the array in Woburn is providing 80+ percent of the School-only electric consumption. With the proposed High School solar canopies, the output will approach or exceed 100 percent of the current School electric consumption. As mentioned above, however, it is anticipated that the Hanlon-Deerfield School will have an impact on the demand for electricity when it opens.

Before closing this discussion of the solar canopies, we would like to draw attention to two related opportunities.

The solar system can also include Energy Storage for charging from the solar system or electric grid. Energy Storage requires that the Westwood Schools identify 5,000 square feet to lease for a minimum 5-year term for a battery storage site. If this is of interest, the economic benefits of the Energy Storage System, which are estimated at \$150,000, will be reflected in the PPA rate offered to the district.

The Westwood Schools is currently the full offtaker of solar energy from the school-based and Woburn PV's, but shares the financial benefit of the power generation with Ameresco as per the PPA agreement. For all solar panel installations under the Ameresco PPA, the Westwood Schools would have a buyout option between years 6 and 20 (once the tax credit has been fully claimed by Ameresco). Therefore, starting in FY'24 or FY'25, the district could exercise this option to purchase the original PV arrays that were installed in the schools to get the full value of the power generation. The depreciated cost of the arrays depends on the year that the buyout option is exercised, and the Westwood Schools can evaluate whether the value of the power generation justifies this investment and whether there are financing options available that make this the right decision.

Electric Vehicle Charging Station

A few weeks ago, the Town of Westwood was informed that its application for electric vehicle charging station funding through the Massachusetts Electric Vehicle Incentive Program (MasseVIP) DC Fast Charging has been approved. The grant to the Town of Westwood totals \$340,212 with approval of up to \$85,053 for 2 ports of at least 62.5 KW capacity at the High School and pays for the equipment and installation. In addition, Eversource has approved Westwood as part of its "Make Ready" program and has made a commitment to installing the requisite underground infrastructure for electric power delivery to the proposed location of the charging station, and to repairing any damage to asphalt or curbs that is caused by the installation of the underground infrastructure.

Based on a previous study that was conducted by Eversource and reviewed by Ken Aries, the former Director of Facilities, the proposed location of the charging station is the faculty parking lot behind the High School. Four parking spaces have been identified that would be convenient both to staff and to community members who are using the building outside of school hours.

We are seeking the consent of the School Committee to proceed with this project, which we anticipate would not drive significant expenditures to the district budget. Expenses not covered by the grant may include:

- Electricity consumption and demand by the user of the charging station
- Shipping / freight for miscellaneous equipment
- Bollards, cubs, or bumper guards
- Software subscription for the charging station
- Warranty
- Insurance
- Training for facilities and maintenance staff
- Expense associated with promoting use of the EV charging station
- Internet connection or cell signal
- Planning or permitting
- Preventive and corrective maintenance on the charging station

It would be our intention to charge users of the charging station a fee that covers the real time electric supply and delivery charges, as well as covers any significant and/or recurring miscellaneous expenses that are described above and that are not covered by other funding sources.

Summary

In both of these projects, we believe that the Westwood Schools have an opportunity to signal a commitment to renewable energy and to support staff and residents who are looking to reduce their impact on the environment. The solar canopy project will also protect the district budget from utility price increases in the coming years. We are presenting both the solar canopy power purchasing project and the charging station grant to you because both are worthy of the School Committee's support and both require School Committee approval in order to move forward.