



Town of Sandisfield
Green Committee
(413)-258-4711
sandisfieldma.gov

Sandisfield Green Committee Final Report

The following projects were completed by the Sandisfield Green Committee consisting of members:

1. George Riley – Committee Chair
2. Nina Carr
3. Jeff Bye
4. Larry Dwyer

Insulation of the Town Hall Annex: The first project of the Sandisfield Green Committee was to reinsulate the Town Hall Annex. Insulation generally has the lowest payback period for reducing energy costs. The old insulation was vacuumed out and replaced with new cellulose creating a 16" blanket with an R factor of R49. The building crawl space was reinsulated with Closed Cell Gaco spray on insulation with a R7.2 per inch rating. The pass between the floor joists was 4.5" creating a rating of R32. A 15 Minute Ignition Barrier was also sprayed over the insulation as required by the building code. There was a unanticipated release of insulation material due to the non-standard construction of the office ceilings and this required a professional cleanup provided by Abide Environmental Contracting. Total Insulation and Remedial Cleaning Cost: **\$21,658.22**

LED Lighting: Fluorescent lighting in the Town Hall Annex and incandescent bulbs in the Sandisfield Town Library was replaced with LED lighting. The fluorescent lighting fixtures in the Town Hall Annex were retrofitted with kits to remove the lighting ballast and fluorescent tubes and replaced with LED tube lighting in the main offices and in the basement meeting room. Emergency and exit lights were also replaced with LED fixtures. Incandescent lighting was replaced in the Sandisfield Town Library with Maxima white LED fixtures. Emergency and Exit lights were also replaced with LED fixtures. Total LED Project Cost: **\$8,562.23**

Solar Array Project: The Green Committee Solar Array Project consists of two 10 kW roof-mounted, solar arrays. One single-phase solar array was placed on the Town Hall Annex and the second single-phase solar array was placed on the Department of Public Works (DPW) Town Garage. Now that the solar arrays have been installed, the Designation Grant will be closed. Additional funding will be requested through a DOER Green Communities Competitive Grant to install a heat pump system for the Town Hall Annex.

Initially in December 2020, a three-phase system was designed by Cambridge Energy Services, paid through a Municipal Energy Technical Assistance (META) 7 grant, which would have included a three-phase solar array, paired with a three-phase heat pump system for the Sandisfield Town Hall Annex. The



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reason the Sandisfield Green Committee had focused on a three-phase design was due to the unfortunate experience of the Town of Windsor. Windsor had installed a 20 kW ground mounted single-phase solar array and single-phase heat pump system for their town hall. However, they did not meet the requirements to qualify for Net-Metering. Net-Metering requires that utilities pay a consumer the retail rate for the electricity produced by their solar array. Under current rules, to qualify for Net-Metering, public buildings are limited to a 10 kW for a single-phase solar array and 25 kW for a three-phase solar array. The Town of Windsor exceeded the threshold for a single-phase system and thereby did not qualify for Net-Metering. This negated the benefits for installing their solar array and heat pump system. In order not to repeat the mistake of the Town of Windsor, the Sandisfield Green Committee focused on installing a three-phase system.

Sandisfield solicited bids from five solar contractors: Grenergy, Energy Resources, Sunbug Solar, Valley Solar and PV Squared. As the bids came in, the prices for solar arrays were less than expected. Also at this time, a new member, Jeff Bye, a retired NASA engineer, joined the Sandisfield Green Committee. Upon evaluating the bids, Jeff Bye suggested we change our design to installing two single-phase solar arrays instead of one three-phase array on the Town Hall Annex. We would then apply for a competitive grant for the heat pump system. Installing a three-phase was selected solely for the purpose of meeting Net-Metering requirements. Also, converting the building to accept three-phase system would have absorbed a substantial amount of the grant funding and not contribute to energy reduction. Therefore, our design was changed, and the Green Committee decided to accept the recommendations of Jeff Bye.

By installing solar arrays on both town buildings, the town will be able to generate more solar energy compared to installing a single system on the Town Hall Annex. The town will be able to take advantage of Virtual Net Metering (VNM) since both buildings will be serviced by the same Eversource electrical power grid. (VNM allows multi-tenant building owners to install a single solar system to cover the electricity load of common areas.) We expect the excess energy produced by the system installed on the town DPW garage to be applied to the Town Hall Annex as the Town Hall Annex uses more energy in a calendar year.

Bids were evaluated and Grenergy was selected as the contractor to install the solar arrays. All the companies that submitted bids were very close in both performance and price. Anyone of these companies would have provided quality work and materials. Therefore, the parameters that we used to select a contractor, were based on the type of panel and the length of the warranty. The type of panel selected was REC Solar which is made in Singapore as opposed to Quantum which is made in China. Singapore has higher labor standards than in China.



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Greenergy has priced the installation of both solar arrays at \$45,000 each and they will be paying prevailing wage to their workers. The savings in electricity to the town is estimated at \$231,000 over 25 years.

When the heat pump system is installed, this will increase the use of electricity, but this cost will be offset by the production of electricity from the solar arrays and the expected elimination of heating oil used for the Town Hall Annex oil burner. Total PV Solar Array Project Cost: **\$90,000**

Date of Final Report Submission:

June 11, 2022

Name and Title of Person Submitting Final Report:

Larry Dwyer