

Town of Center Harbor, New Hampshire Municipal Building Solar Photovoltaic Project (Proposed)

The Energy Committee and Board of Selectmen have been exploring a Solar Photovoltaic (PV) project for the Municipal Building to save on future electricity costs for the Town.

The Municipal Building (Municipal + Police + Fire) electricity usage has averaged 92,866 kWh / year from 2015-2022 (average cost was \$17,109.29 / year). The last 3 years saw a significant reduction (~17%) in usage from 99,076 kWh average in 2015-2019 to 82,516 kWh in 2020-2022.

Several proposals were considered, including roof and ground mount. The currently favored proposal is a ground mount system using the field behind the Congregational Church that is part of the Town's property on which the Municipal Building is located (TML 102-001). This proposal is favored because (1) there are no issues concerning the roof (to support the system) and impact to re-roofing that will likely be needed in ~15 years, (2) a larger system can be accommodated, and (3) the Town has no other plans for this part of the property. The proposed system may look something like the following:



This would be a 111-kW system that would generate approximately 130,000 kWh annually. While this generation capacity technically exceeds the current annual usage, it would generate enough power to offset the reduced “exported” power credit offered by NHEC.

The 2022 Inflation Reduction Act also makes such a system attractive as the Town can receive up to a 30% refund for the cost of the system.

The system is estimated to cost approximately \$311,000 (estimate from Ted Vansant of New England Commercial Solar Services, who also designed the proposed system). With the 30% refund, this would cost the Town a net of \$218,000 to install.

The payback of this \$218,000 would come in 3 parts:

1. Reduced electricity costs as much of the power used during the day would be “free” solar power (i.e., the Town would not be using as much power from the grid). At the current (2/1/2023) rates, this saves the Town \$0.23149 per kWh.
2. Credits for power that is exported (in excess of what the Town used). At the current (2/1/2023) rates, this credits the Town \$0.15076 per kWh.
3. Yearly REC (Renewable Energy Credits) for each 1 MWh (1,000 kWh) of power generated (regardless of whether used by the Town or exported to the grid). In 2022, NHEC paid \$35.00 per 1 REC (1 MWh). And, with 130,000 kWh (130 MWh), that would be \$4,550.00 annually.

In a worst-case scenario where all of the power is only “exported”, the Town would save \$19,598 annually plus receive \$4,550.00 annually, for a total savings of \$24,148. And, with the \$218,000 net investment, this results in a payback period of 9 years. The payback period will likely be shorter – but this depends on the electric rates and renewable energy credit rate.

Note that the 2/1/2023 rates are winter rates which tend to be a bit higher than the summer rates. If we used last summer’s rates in the above, the savings would be \$15,926 plus the \$4,550 for RECs, for a total savings of \$20,506 / year and a payback period of 10.6 years.

A PV system should have a 30-year life, so even with the longer payback period, the Town would have almost 20 years of mostly “free” power (excepting some maintenance costs). This system also significantly reduces carbon emissions related to electricity generation.

Moving forward, the Energy Committee and Selectmen will continue to work on this proposal to present a full plan with set costs for the 2024 Town Warrant.

Town residents that have an interest or opinion on this project are encouraged to attend future Energy Committee meetings (usually at 7 PM on the third Monday of the Month in the Cary Mead Room) or Selectmen’s meetings (usually at 6 PM on Wednesdays in the Cary Mead Room). Visit www.centerharbornh.org for meeting schedules and agendas.

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