

# Madison, NH Solar Exceeds Production Expectations

Madison, NH Energy Team

In 2014, voters in Madison, NH, established a citizen's energy committee at town meeting. The committee first worked to bring weatherization to as many town buildings as possible before looking at the possibility of establishing the first municipal solar system in the Mount Washington Valley.

At a following town meeting, voters approved a warrant article that authorized selectmen to enter into a lease agreement with a third-party investor to provide a piece of town property for the purpose of the installation of a ground-mounted solar array.

The Madison Solar 63-kilowatt array, consisting of 180 panels, was installed by Revision Energy behind the town ballfield in July 2020. ReVision Energy had submitted a Power Purchase Agreement (PPA) acceptable to their investors, the committee and board of selectmen. No taxpayer money was spent by the town for the installation. The projected savings for electricity is \$1,000 annually (for the combined usage of town hall, highway and maintenance garages, historical society, and transfer station). As stated at the time the Madison Energy Committee concluded this project, there are long term favorable cost savings for the town. Several years down the road, perhaps following the conclusion of the 2018 10-year school bond, the town can consider purchasing the PV system at a greatly reduced price. Once the purchase of the PV system investment is recovered, the town will be producing much of its electrical energy for the above listed town buildings at little or no cost.

The projected average production for the array was 76,000-kilowatt hours of energy annually. However, after two full years of operation, the solar kWh production is exceeding this projection. In 2021 the production was 76,981 and for 2022 it was 79,839.

The 2021 cost savings for the electricity usage for the town buildings covered by the PPA was \$1,000 as projected. But the cost savings for the electricity usage for 2022 exceeded projections for a total of \$5,500. The cost of (the electric utility) Eversource Energy rose from \$.0886/kWh in Feb., 2022, to \$.107/kWh, and in August




This 63 (DC) kWh array is ground-mounted at an optimum 35-degree angle facing due south on a south-facing slope behind the town ballfield. ReVision Energy installed the solar system. Since monitoring began June 9, 2020, this system has generated 199,115 kilowatt hours of clean energy, offsetting 267,000 pounds of CO2 emissions, and the equivalent of 6784 days of electricity usage in an average American house.

up to \$.226/kWh. The town hedged the more than doubled increase in energy costs mid-year and saved almost enough to cover the 2022 electricity costs of the fire station and the library combined (\$6,098). In summary for 2022, the extra solar production and the increased Eversource Energy costs have produced an even more positive outcome for the town.

ReVision Energy of Maine and New Hampshire estimates this project to save the Town of Madison almost \$370,000 over the 40-year lifespan of the system. So far it appears that this figure is conservative given the extra solar production and increased Eversource rates.

Madison is fortunate to have citizens committed to energy conservation and solar, especially Russ Dowd who is the former general manager of the wood-powered Pine Tree Power of Tamworth, who understands the technology of power generation and the grid. Other members are a part of the solar-powered Tin Mountain Conservation Center of Albany's valley-wide Energy Team that has partnered with Window Dressers to provide low-cost energy saving inserts to households throughout the Mount Washington Valley.

To view the current Madison solar array production visit [https://bit.ly/powerdash\\_MadisonNH](https://bit.ly/powerdash_MadisonNH).

The Madison Energy Team members contributing to this article are Russ Dowd, former manager of Pine Tree Power, Noreen Downs, Retired IT systems and project management consultant, and community and environmental causes volunteer, and Russ Lanoie, contributing writer and distributor for Green Energy Times. 

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