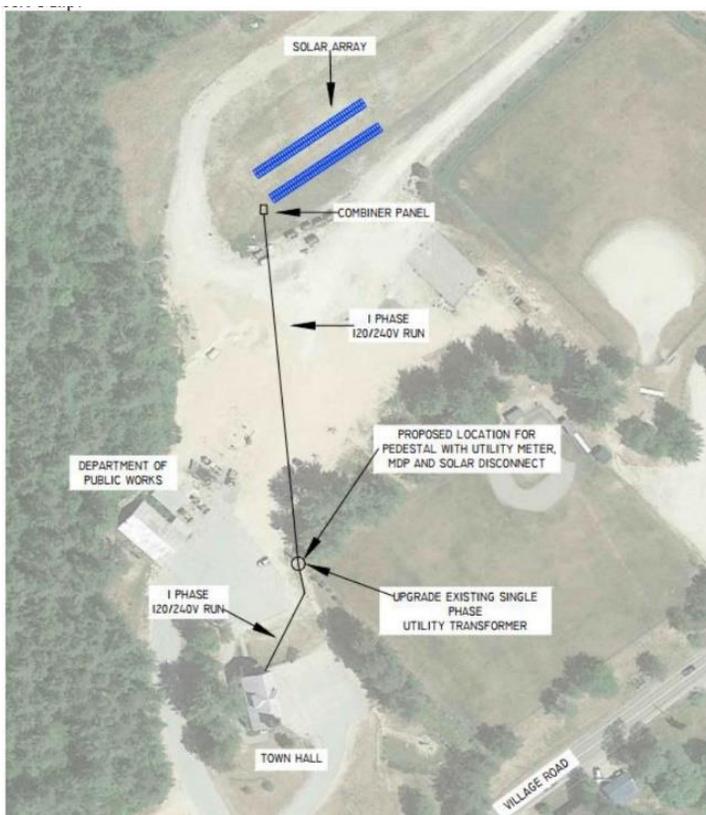


## MADISON ENERGY ADVISORY COMMITTEE

**Solar Power for the Town Buildings** -The Madison Energy Advisory Committee (MEAC) worked diligently in 2018 to plan and draft a Request for Proposal in order to select a vendor for the installation of a photovoltaic solar array in order to supply electricity for the town buildings and the school. Late in 2018, the committee determined that the elementary school could not be included in the project as future long term cost projections were quite unfavorable. The committee decided to downsize the project to serve just the town buildings, and so starting in the spring of 2019, the committee began the process of contract review with the selected vendor, ReVision Energy LLC. The committee worked thru additional analysis and determined that further downsizing of the PV solar array was needed to insure cost projections for the town buildings were favorable. After study and refinement, ReVision Energy submitted a Power Purchase Agreement acceptable to their investors, the committee and board of selectmen. By the fall of 2019, the contract was finalized with Board of Selectmen approval, and installation of the solar array behind the town ball fields is scheduled to complete and be commissioned in the spring of 2020.

Here is a ReVision Energy Google Earth schematic showing the placement of PV solar array.



The array will consist of 180 ground mounted panels. A fence will surround the array. The array will produce on average 76,000 kilowatt hours of electricity annually, enough to roughly cover the needs of the town buildings. The electricity produced by the array is directed into the Eversource grid. When the sun is shining and the grid is producing more than the buildings need at any given time, credit for the over production is earned and applied against the needs of the buildings during the night and when the panels are not generating at full capacity (ie., snow cover and cloudy days). All of the panel production down time is factored into sizing of the array to meet the necessary electric load of the buildings. The town annually spends between \$14,000 and \$15,000 for electricity. The projections with the Power Purchase Agreement show an annual savings of \$1,000. Although this doesn't sound like a lot, 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 much reduced price. Once the purchase of the PV system investment is recovered, the town will be producing most of its electrical energy at little or no cost.

Bottom line, there are savings involved, although agreeably, not a lot. The big win is that the town will be utilizing the sun to provide efficient and renewable energy in support of the town buildings, placing less demand on the grid, and thus reducing the town's carbon footprint. The advantage of the power purchase agreement is that it provides the town a fixed energy cost structure for budgeting purposes, no matter how much the actual utility rates fluctuate over time. And, starting with this smaller sized project gives the town a chance to see a PV solar installation operate with little to no upfront financial risk and hopefully become a showcase for what might be a future project for the elementary school to consider. The elementary school uses more than twice as much electricity annually as all the town buildings combined.

**LED Lighting** - Eversource is still willing to work with the town to complete the conversion of the town hall meeting room in the future and have provided the town with a quote for the project. Funding is currently not available, but the MEAC team will keep it in their follow-up file and look for alternatives. The Friends of the Madison Library sponsored half the funding to switch over to LED lighting (replacing the bulbs and ballasts) in the

Chick Room. Better lighting, lower electrical demand and lower costs. Congratulations on completing that project and saving energy.

**Town Hall Weatherization** - Also in the follow-up file is the town hall weatherization project (improving air sealing and insulation).

**Electricity Tracking** – The MEAC committee continues to track the monthly and annual electric usage by building, including the elementary school. Overall, resulting from the implementation of building controls, LED lighting, and building envelop weatherization (sealing and insulation), the annual kilowatt hours required are dropping. The town buildings are seeing a decrease of 8.6% in 2018 and 9.6% in 2019. The two wings of the school have seen a decrease of 11% in 2018 and an additional decrease of 17.8% in 2019. All good trends.

Building	Madison Electric Usage kWh			
	2019	2018	2017	2016
Town Hall	22,659	24,817	26,739	27,661
Library	10,045	11,705	12,778	12,861
Fire Station	13,436	13,124	14,828	18,774
Highway Garage	7,004	7,113	9,025	9,089
Maint. Garage	12,090	13,950	16,513	14,715
Transfer Station	5,136	7,260	5,549	6,009
Historical Society	528	345	336	214
Misc Other	599	750	798	809
<b>Total</b>	<b>71,497</b>	<b>79,063</b>	<b>86,565</b>	<b>90,131</b>
Madison Elementary School has two meters as a result of two separate services.				
East Wing (Older Section)	100,641	114,501	133,562	136,818
West Wing (Newer Section)	69,280	92,303	98,877	98,956
<b>Total</b>	<b>169,921</b>	<b>206,804</b>	<b>232,439</b>	<b>235,774</b>

As residents, you can improve your home energy efficiency. Here are some tips:

- Visit the [NHSaves.com](http://NHSaves.com) website to determine if you qualify for a \$100 home energy audit (value up to \$400) and up to \$4,000 rebate on home weatherization (sealing and insulation) projects.
- Look into Energy Star appliances – rebates available.
- Pick up a copy of the Green Energy Times (available at many locations throughout the valley such as Community Market and Deli, Hannaford's, Paris Union) or visit the website at [greenenergytimes.net](http://greenenergytimes.net) for articles on home energy saving topics and specials.
- Look into community constructed Window Dressers ([windowdressers.org](http://windowdressers.org)) – inside the home window inserts, which reduce heating costs and improve comfort. Contact Nora Dufilho at Tin Mountain ([nbeem@tinmountain.org](mailto:nbeem@tinmountain.org) or call 603-447-6991) to sign up and for more information.

If you would be interested in joining the energy advisory committee for future projects, please contact Linda Shackford at town hall.

Noreen Downs (co-chair), Russ Dowd (co-chair), and Russ Lanoie (member) on behalf of the MEAC  
 Additional Members: Sloane Jerrell, Bob King, and Bill Lord (board of selectmen representative).