



Brandon Energy Committee

Agenda for 6:00 PM September 7, 2021 Meeting

(no subject)

AGENDA

1 message

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## **MOVING TOWARD COST FREE HEATING AND COOLING**

A Monthly Message from the Brandon Energy Committee

It is time to acknowledge we are in a whole new era. In Brandon it is now feasible to live very comfortably in homes that generate no heating or cooling costs.

Some in Brandon have done it. Many are moving in this direction.

A local friend of mine has paid nothing in heating, cooling and electric costs for six years in the house he built. My brother has built more than one so-called 'Net Zero' home in the past ten years. The added costs to build with extra insulation, heat pumps, energy efficient appliances and solar systems has been paid for after ten years of zero heating, cooling, and electricity costs. Now, in retirement he is living very affordably and securely.

Building net zero has become considerably more affordable over the past ten years and now rivals traditional construction costs. This is primarily because solar system costs have dropped very substantially, heat pumps and on demand water heaters are far more affordable than traditional heating/cooling system options, and insulation techniques and materials are more affordable.

Achieving this goal is far more challenging with older houses. However, over the last twelve years my wife and I have been making gradual but steady headway toward this goal in our 40-year-old house.

We started with an energy audit which we affordably arranged through NeighborWorks. This helped us determine what the most cost-effective weatherization upgrades were for our home. Over the following year we followed through with the top three of their six recommendations. This did a lot to cut drafts and reduce heating costs.

We also invested in a solar array back when it afforded a 14-year payback. As it turned out, with interest rates dropping during this time, we have been extra content with our 7% return.

We gradually replaced old appliances with highly energy efficient ones and recently invested in heat pumps. We installed the heat pumps last year and cut our heating and cooling costs in half. With the additional solar panels that we added a few years ago we are very close to a net zero home. We will get there when we install an on demand electric water heater and replace our gas stove in the coming year.

Another of our committee developed a plan to move from fossil fuel to electrical energy in a residential setting. Their goal was to try and produce as much electrical energy as they used over the course of the year without using fossil fuels while reducing the carbon footprint of the house.

They purchased their home in 2015. It was constructed in 2004. It used an oil-fired boiler for both space and water heating needs. The AC units for cooling were traditional electrical cooling units but were nonoperational. In 2016 they added two heat pumps and a air sourced hot water heat pump. They also installed a 3.9 KW roof mounted solar array in the same year. In 2017 they added 12 more inches of blown in insulation in the attic area so that their roof insulation is now R 60. In 2019 they insulated the basement with both sheets of foam and traditional insulation, (R 18). In 2020 they added a third heat pump for the basement.

Finally in 2021 they completed an additional 3.3 KW solar array on the roof. They have not used the oil boiler in over two years. They build credits with Green Mountain Power during the summer and subtract them in the winter when energy use is higher and solar capabilities are reduced.

**You can move in this direction too!** There is a good deal of support from local agencies who have financial incentives, great information and finance programs that cost less than the energy savings you will achieve. You may not be in a position to get to net zero in a short time. However, with the support of these agencies and the information we can provide, you can make



consistent progress over the coming years, and save money in the process.

For households who qualify, Vermont's Weatherization Program through BROCC ([Home Weatherization](#) | [BROCC Community Action](#)) provides free weatherization upgrades that on average make \$9,500 worth of improvements per home. The Heat Squad of Neighbor Works of Western Vermont ([HEAT Squad](#) | [NeighborWorks of Western Vermont \(nwwwvt.org\)](#)) offers low-cost energy audits, affordable unsecured energy loans, and project coordination from start to end. Efficiency Vermont ([Find Your Rebates](#) | [Efficiency Vermont](#)) offers many incentive programs for weatherization, heat pump installations, energy efficient appliances and much more.

We encourage you to call on us to get started or to get support with continuing on this important path towards energy independence at low or no ongoing cost.

Alternatively, come by to our Harvest Fest booth at Estabrook Park on October 3<sup>rd</sup> from 1 to 3 PM to learn more.

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This month's article is authored by Jim Emerson