My husband, Bill, and I have spent many years seeking alternative solutions to heating and energy production for the home and farm. We run a small mail order tree nursery business, and are retiring in 2015 after 35 years in business. We built our home in 1974-77, using the principle of "Thermal Efficiency Construction" developed by my

Bill's brother, Dick Bentley. This means that the house is basically a big thermos bottle, with 2 ft thick fiberglass insulation all around.

In 1994 we put up a 20KW Jacobs windmill. Later we added some PV solar panels on a pole, which can be tilted to take advantage of northern latitude sun in the winter. Over the years we added to our PV capacity by installing additional racks of solar panels, batteries and inverters.

In an attempt to heat our home more cost-efficiently, we installed a TARM gasification boiler, which heated water in an 800 gallon bulk tank. This was pumped to the house underground and to a pad under the milk room in the barn. (We have one milk cow.) The milk room and one of the rooms in the house had tubes under the floor; the other zones were hot water heater and baseboard heat for the remainder of the house. We amended this system with 90 evacuated solar thermal tubes mounted on the roof of the barn, feeding heat into the 800 gal bulk tank.

In late 2013, we decided to remove the boiler setup and install a Tulikivi masonry stove in the main living chamber of our house. There were several factors that encouraged this decision. First, the boiler took a lot of firewood, and had to be kept loaded, sometimes several times daily on very cold days. This necessitated a trip outdoors each time. Next, because the boiler would damp down when the heat in the tank got high enough, or when the transfer of heat through the exchangers was not fast enough, it spent a lot of time in "smolder mode", meaning with the dampers shut down, creating lots of creosote. This made it prone to chimney fires, and caused a pretty unappealing crust of "goo" at the top of the stovepipe. At Fall start-up, after sitting idle during the summer months, the system was prone to forming bubbles, which would effectively stop the movement of the hot water through the system, leaving us with no heat in spite of a good fire. These bubbles were very difficult to get rid of, even though we had a number of gassing out valves in the system. And finally, looking at the wall of Rube Goldberg tubes, zones, valves, pumps and flashing lights, one would not think that this was "simplifying" our life.

Mark Seymour of Radiant Hearth in Potsdam, NY, built our Tulikivi masonry heater and brick chimney in the summer of 2014. Mark equipped our masonry heater with 3KW of thermostatically controlled electric heat coils that will heat or home with electricity generated from either our wind or solar power systems in the event we go away. Our house is a self-build wood-framed A-frame, so one of the challenges of installing a masonry stove was supporting the weight involved. We used 6 industrial jack posts in the cellar and beefed up the sub floor to accommodate the weight of the heater and chimney. (about 6000 lbs.)

The Tulikivi is beautiful and simple...and it burns a fraction of the firewood that the boiler did. Admittedly, it is not heating the same number of zones that the TARM did, but we use a regular wood stove for the other section of the house. It is so easy to start a fire in the Tulikivi (we've nicknamed her "Freya", for the goddess of the hearth). And the nice thing is, we don't have to keep throwing wood in...one fire is normally enough to keep us comfortable; when it is below zero, we have one fire in the morning and one in the evening. And we both enjoy being able to actually see the fire right in the living area. The amount of firewood we have used to keep warm is amazingly small--several days wood can fit easily in a small niche right next to the stove. And even now, in mid-February, there is lots of wood left in the woodshed!

The Tulikivi has been one of the smartest investments we've made in our attempt to be self-reliant for our home heating. We look forward to cutting less firewood in our "golden years", and knowing that burning less is lowering our contribution to CO2 and Climate Change.