



## Renewable Energy: Start Training Yourself to Produce Your Own Power

by Michael and Arika Menzies

Renewable energy is a broad category including solar, biomass, wind, tidal power as well as other sources. On our co-op based biodynamic/organic farm, we generate a large portion of our energy from renewable sources. Over the years many people have asked how to do the same. This article covers some of the ways individuals can learn to generate their own power.

The first step of any renewable energy plan is conservation. Most of us don't think about how much power we waste. Some refrigerators, water heaters, and heating systems are very wasteful. They were designed for reliability in most cases, not for efficiency. To learn about renewable energy production, one must first understand how much one is using. Then figure out how much can be reduced just by using more efficient systems. The simplest example of this is switching from incandescent to compact florescent or light emitting diode (LED) lighting. By making the switch, the reduction of power needed often exceeds 75%. In fact, efficient lighting generally pays for itself in less than a year depending on the application. Another example of conservation is to simply buy more efficient appliances when your old ones end their useful life.

The second step is identifying what renewable sources are available. In the Pacific Northwest where our farm is located, we have access to wood products, summer sun, vegetable oil, food and crop waste, and – in some places – wind. You will need to find out what you have access to in your area. Each watershed and bioregion is different and all have their own renewable energy attributes.

Finally, you must pick the source that will give you success in the shortest period of time. This is not to say complex systems don't work well. We have many complex renewable energy systems on our farm. But to really learn what works well, you must keep motivated, and success is a great motivator!

As an example of using the above process to learn how to use renewable energy, let us use wood products. On our farm we have about seven acres of trees, which have been minimally managed for the last 50 years. We like having a forest so we have encouraged a broad diversity of tree species. This means we can pick our renewable energy feedstock from lots of different sources. One tree we have in abundance is Douglas fir (*pseudotsuga menziesii*), a native tree that is planted heavily in our area. Because it is such a dominant species, we have many damaged Douglas fir compared to other tree species. The plentiful damaged trees can be removed and we can leave the healthy ones behind. So we have conserved the trees we want to keep (step one) and identified the source available to us (step two).

Now we need to pick a way to use the source for success (step three). Well-dried Douglas fir wood burns well and if it's harvested from a source where it will easily be regrown, it's also carbon neutral. So we burn the wood in our wood stove. This generates heat for our house which offsets electricity, oil, or propane that we would need to import. Although the above example is simple, it demonstrates basic renewable energy training for the small biodynamic farmer.

