THE JOY OF PV MONITORING

When I entered 7th grade, my father decided I was responsible enough to keep a 10-gallon aquarium in my bedroom. He said he'd foot the electric bill, but I'd need to find work to afford the hobby, that the fishes' welfare was my sole responsibility, that whether they survived or not depended on me alone. I soon learned that they needed the proper temperature, a healthful diet and most importantly, clean water. Despite the charcoal filter and aeration, the water required steady maintenance and replacement. Few fish survived to an advanced age.

Many years have gone by, but the experience and responsibility of keeping fish has made me think of our green world as an aquarium whose water has not been maintained and is rapidly becoming uninhabitable. I wonder and worry about the quality of young peoples' lives when- and if- they reach my age. Their expected lifespan dropped a full year in 2021. How will they survive pollution and climate change? Deniers, polluters and do-nothing politicians exasperate and infuriate me. I have tried to apply my father's emphasis on aquarium responsibility to fit our human tank by conserving, recycling and living as green a life as possible. But nothing I have done so far has been as effective or satisfying as our recently activated photo-voltaic system, and nothing has spiked our family dopamine levels as much as scanning the system's amazing monitor.

The PV monitor is an app on my computer that details how many kilowatt hours of electricity the solar panels produce by the day, week and month or live in the moment. For example, right now, at 1:30 p.m. on a somewhat hazy day, they are putting out 6.3 kwh's. The monitor is showing that our household is consuming only 0.7 kwh's. We are exporting 5.6 kwh's into the grid which will be credited to night-time use. The monitor reveals that yesterday our system produced 42.5 kwh's and we consumed 15.2 kwh's, thereby exporting a net of 27.3 kwh's. To my delight, it shows that the panels prevented 68 pounds of CO2 from being discharged into the air we breathe that fossil fuel-burning power plants producing an identical amount of power would have otherwise emitted. According to the monitor, this is the equivalent of planting 0.5 trees daily. In fact, the reduction in CO2 emissions by our PV system is comparable to planting approximately 150 fully-grown trees each year. Before getting the monitor, I never realized how much pollution our household's electric consumption was spewing into the atmosphere.

Imagine the difference in air quality if every house could prevent so much greenhouse gas from fouling the air and hastening climate change. Then imagine cooling and dehumidifying our homes in the summer and heating them in the winter with ultra-efficient PV-driven heat pumps. Imagine running our plug-in vehicles compliments of the benevolent sun.

Certainly, PV systems are not the complete answer. We will continue to need fossil fuels until green energy sources can fully replace them. But until that time comes, I believe that we can mitigate the damage done by fossil fuels to pass a livable world to future generations. Supplementing coal, oil and natural gas with green energy is a commonsense step in the right direction individuals can take. Unfortunately, despite the 30% federal income tax credit toward the purchase of a PV system, many of us don't have the funds to afford one and renting the family roof to a solar installer is not always appealing. Still, as citizens we do have the power to vote for politicians who respect the environment, understand the crisis of climate change and prioritize the replacement of fossil fuels with green solutions. We can demand action. The water in the aquarium is getting mighty murky.

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