

This piece was written when we lived in Santa Rosa, CA, back in 2007, concerning society's use of a finite substance as if it is infinite. The reference to "4 of the last 5 years" of EV driving was due to our Th!nk City EVs being "reclaimed" (a story told in the movie "Who Killed the Electric Car") and the hiatus until we purchased our Solectria Force.

Using Irreplaceable Resources

Let's say you're stranded on a desert island and, miraculously, there is also a 55-gallon drum of fresh drinking water. You can also make clean water via a clever apparatus to collect condensing droplets at the rate of, say, one pint a day. How would you decide how much drinking water to use each day? A pint? A gallon? Just over a pint? Given that you don't know when, or even if, rescuers will appear, do you make plans for a few weeks, many months or indefinite survival? Well, obviously you wouldn't continue your current rate of water usage, which if you are living in Santa Rosa is apparently around 130 gallons each per day. Sat under your palm tree in your current predicament, the idea of flushing a toilet with drinking water would probably constitute a nightmare! Surprisingly this column is not directly about curtailing water usage, although that is definitely a laudable goal. Instead the above illustration is intended to draw attention to our use of fossil fuels.

Our planet has been endowed with a huge resource of fossil fuels, including oil, coal and gas. Oil is currently of particular interest because we appear to be at the point of all-time highest extraction, known as "Peak Oil". From now onwards the amount of oil available worldwide will unavoidably decline, just as U.S. domestic production has done since 1970. Oil is a finite asset much like the drum of water on our hypothetical desert island but rather than allocate this resource in any far-sighted way and treasuring it for its remarkable properties, including incredible energy density and versatility, we are burning through the stuff at a rate of around 1,000 barrels a second. In fact there is a book with that very title by energy economist Peter Tertzakian (ISBN: 0071492607). There is also a book by Santa Rosa's own Richard Heinberg, entitled the Oil Depletion Protocol (ISBN: 0865715637), where he propounds the adoption of a measured reduction in international oil usage, i.e. controlling what will otherwise be forced upon us by nature and geology.

In this context, my wife and I have driven, for 4 of the last 5 years, a freeway-capable car that doesn't use gas. This vehicle has no tailpipe and runs on locally-produced energy because it is electric and much of the electricity in the North Bay comes from the Geysers geothermal plant. Now consider that three typical solar electric (PV) panels will produce enough energy per day in Sonoma County to cancel out the impact on your PG&E bill of driving that vehicle about 34 miles per day and you have a way to drive over 12,000 miles a year without dipping into that proverbial desert-island water barrel. Also, those three PV panels cost less than \$3,000 and that is already cheaper than the

cost of 1,000 gallons of gasoline. Based on a car achieving 25 miles per gallon, that's about two years of driving. So not only are those panels already cheaper in year 3 but they come with a 25-year warranty and are projected to last for at least 40 years. They have no moving parts, involve no payments to foreign dictators and will be your own personal "fuel" station as long as the sun rises.

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