Diabologic: A Day in the Sun
by Frank Dolinar

Years ago, I saw a political cartoon with a disconcerting message. In each of the four frames, there was a cigar smoking, industry fatcat responding to an unseen person who had apparently just made a request for electrical power. It went like this:

F1: "You want coal-fired electrical plants? No problem. We own the coal mines."
F2: "You want hydro-electric power? No problem. We own the dams."
F3: "You want nuclear power plants? No problem. We own the uranium mines."
F4: "You want solar power? No prob…" Pause "Solar power isn't feasible."

The cartoon didn't mention oil, but it could have and it would not have changed its very clear message. Solar power doesn't get run through someone else's meter so you can be billed. If the consumer isn't being charged every time he/she uses electricity, or buys a gallon of gasoline, the people who produce the product have no interest in continuing to do so.

Should energy producers be compensated for the work they do & the product / service they provide? Certainly. And there is no lack of customers who will pay, including me.

However, fossil fuels are becoming harder to find and the people who control the mines and the pipelines are understandably interested in maximizing the continuing cash flow in their direction for as long as possible. The lakes behind our largest hydro-electric dams are slowly filling up with silt, which will eventually make power generation difficult or impossible. And it appears that no one wants nuclear waste in their backyard for a couple of centuries.

As I watch what these concerns are doing to my life (e.g. rising fuel prices), my hopes for the future, and the day-to-day gyrations of my investments, I wonder if it's not time to look for a different business model or set of business models. Consider these:

- Solar (aka photovoltaic) power generation: as fabrication techniques improve and power yield per unit area increases the cost of providing electricity from this source is rapidly moving within the economic reach of individual consumers.
- Fuel cells: Different types of fuel cells use different fuels, but most people think of the PEM (Proton Exchange Membrane) type, which uses hydrogen & oxygen to generate energy. Fuel cells come in all sizes (aka power generation ratings). But a rechargeable unit about the size of a large humidifier, available today, will deliver about 5 kilowatts – enough to power a modest sized house.
- Hybrid / electric cars: Already available with a fast growing market share.

Combining these leads to the following scenario:

- Photovoltaic shingles on your house provide power as it is generated.
- The unused portion of this generated energy is used to make sure your fuel cells (two, for redundancy) are fully charged.
- These fuel cells provide power at night or when there isn't enough sunlight to generate adequate power for your immediate uses.
- When your fuel cells are fully charged, Federal law mandates that your local electric company must purchase any electricity you generate that's more than you need.
- Recharge your hybrid or electric car every night.

This approach reduces fossil fuel consumption and emissions, distributes electrical power generation, makes a power grid failure unlikely, doesn't require long term storage of toxic wastes, and is rapidly becoming price competitive with traditional power generation. And once the up-front costs are amortized, electric power becomes essentially free.

Hmmm. Apparently solar power ***is*** feasible after all.