

Payback



Solar Return

Derivation: "Pay" is from Latin pacare, to pacify; from pax, peace. "Back" is from Old English bæc, a human back. "Payback" is a return on an investment equal to the original capital outlay; or requital, something given in return.

With rising utility rates and increasing incentives for solar energy, financial analysts can now often talk realistically about solar energy systems having a viable financial payback. Combine a decent solar (or wind or hydro) resource with high utility rates and state or utility incentives, and renewable energy systems can yield better returns than some traditional investments.

Solar payback consultant Andy Black of OnGrid Solar educates dealers, installers, and their sales forces about the financial viability of solar energy systems. He has developed tools that make it easy for solar energy professionals to run the calculations and present them to potential customers. A growing number of solar dealers and consultants are examining the financial aspects of solar energy, and selling systems on the basis of financial payback.

Payback or "return on investment" factors include the value of the energy produced (utility net metering agreements and green tags), tax benefits, federal, state and utility incentives, and the increased value of your property after a system is installed. This last item is often overlooked, even though a family's largest investment is usually in their home. In a recent article in *Solar Today*, Black compared the value of a solar-electric (photovoltaic; PV) system to the value of a kitchen remodel. According to *Remodeling Online*, a kitchen remodel typically returns about 75 percent of its cost when the home is sold. Black shows that a solar energy system on a home in California can return 85 to 140 percent at resale, depending on a number of factors.

Black and others estimate an annual rate of return between 10 and 15 percent (and sometimes higher) for solar-electric systems in California and other states with high incentives and high electricity rates. This investment trumps the stock market's historical return, a fact that is driving more and more people to install systems where the incentives are available. If you live in a place where the financial payback is compelling, you no longer have any economic excuses—invest in a solar energy system!

by Ian Woofenden

Even if you live in a location where the financial numbers are somewhat less compelling, buying a system (after you've upgraded your home for energy efficiency) can still pay off in many other ways. Focusing on financial payback alone reduces solar energy systems to the level of purely financial investments—pretty low in my book. Very few of a typical homeowner's decisions are based solely on the finances. Most people don't go into the grocery store and look for the cheapest food, into the auto dealership and ask for the cheapest car, or into the furniture store looking for the cheapest dining room set.

Whether it's a kitchen remodel or groceries, most of us are looking for *value* that goes well beyond dollars. We may choose food that is healthy for our bodies and for farm workers, tastes good, and is fresh. When shopping for a car, we look for function, style, fuel economy, and other values. And in our furnishings, clothing, and other consumer purchases as well, the cost is only one part of our decision.

Nor do we perform complicated financial analyses to decide whether broccoli has a better payback than Oreos. This isn't because food has less financial impact on us than buying a renewable energy system. The average four-person American family easily spends enough on food every two years to buy a 1 KW solar-electric system. And the quality of food we eat has a great deal to do with our health and longevity, which have financial impacts as well.

Am I suggesting that we not look at the financial reality of solar energy systems? No. I'm suggesting that the money is just

Product Purchase Considerations

- Price
- Function
- Quality
- Aesthetics
- Brand loyalty
- Manufacturer's social consciousness
- Convenience
- Status
- Durability
- Reliability
- Environmental friendliness

one piece of a broader analysis. We choose almost everything we purchase based on various values we hold. Solar energy systems should be no different.

Sometimes we put one criterion above all others. For instance, I recently bought a new digital projector, to use for presentations when I travel. I shopped around for the smallest projector available, and found one that is a mere 78 cubic inches. It fits in my laptop computer's bag, allowing me to travel much lighter. Did I drop all other criteria when I chose this machine? No, I wanted a full-featured projector with reasonable resolution, a standard warranty, and available support. Was cost not an object? Well...let's just say it wasn't my top priority—I was willing to pay more for higher value.

For many people, investing in a solar energy system is no different. They look beyond the financial payback, and bring other values into their buying decisions. They may be interested in embodied energy payback—which they'll get in two to four years. They may want status payback, which they'll get instantly. They may want environmental payback, which they'll get rather quickly if their present electricity comes from coal, oil, gas, or a nuclear reaction.

When someone asks you what the payback on your treasury bills or mutual funds is, you can give them a financial answer, since they are asking about a primarily financial investment. But an investment in a solar energy system goes well beyond the financial realm. Unless you're talking to the kind of person who *does* want to know what the payback on broccoli is, maybe it's worth taking a broader view. Solar energy may or may not have a fabulous financial payback in nonsubsidized situations, but the enormous paybacks in reliability, environmental friendliness, and solar status can mean many happy returns.

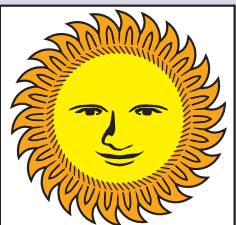
Access

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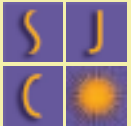
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