

Sunburned by Solar Paperwork

A myth persists that solar power is too pricey. The reality is that in many states – such as California, New York and Hawaii -- solar is already cheaper than utility power on a \$/kwh basis. Not surprisingly, by far the biggest factor in the cost of electricity generated by solar is the installation costs for a system.

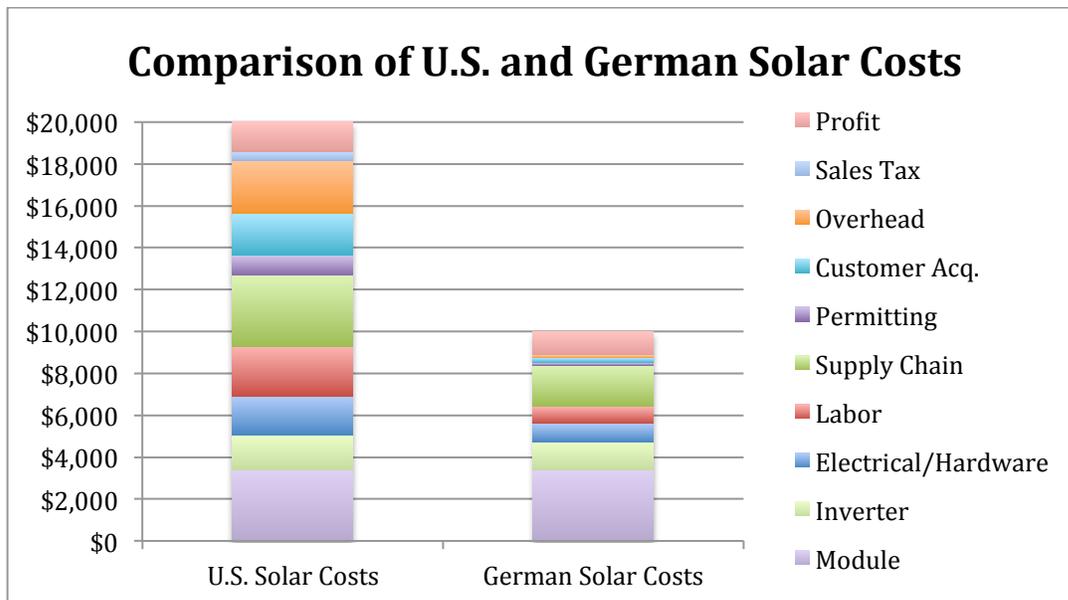
We can cut these prices **in half everywhere** simply by eliminating the excessive paperwork it takes to install a photovoltaic or solar thermal system.

Prices have plummeted so much over the past two years that the solar panels and associated supplies cost about \$8,000 for a typical 4,000 watt residential system. A qualified solar specialist or electrician should be able to install these panels for about \$2,000 (it's only about a day of work). The total installed price should be about \$10,000, without any tax credits or incentives. That is about the price of a comparable system in Germany.

But the average price of a residential system in the U.S. is about \$20,000. So where does the extra \$10,000 go? I can assure you that it is not the result of greedy installers, paranoid utilities, or greater German installation efficiency.

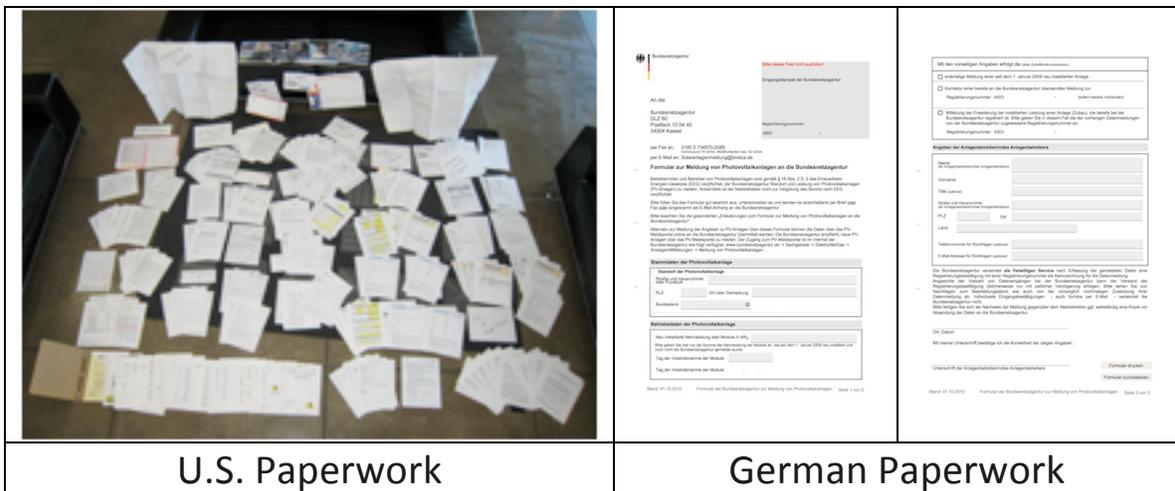
Studies by the National Renewable Energy Laboratory and by the University of California, Berkeley both confirm that these higher prices are almost exclusively related to the paperwork it takes to "officially" install a standard rooftop system in the U.S. That's right, government red tape -- local, state and federal.

The following chart compares U.S. solar costs to German costs (studies were updated to reflect current solar panel prices).



Even though solar panel costs are about the same, in almost every other category German costs are lower. In Germany, the residential solar industry has no red tape, there is a highly-tuned supply chain to get equipment to customer jobsites, installers get projects completed in a day, permitting is virtually automatic, costs to acquire a customer are very low, and overhead is negligible.

I won't bore you with the litany of forms, special requirements, web page data entry, complex calculations and multiple inspections required in the U.S. The following picture shows the collection of paperwork that was required for a simple rooftop installation. Compare this to Germany, where they have historically used one form, front and back of one piece of paper. And now, the whole rooftop solar registration process in Germany is done on-line with the Federal Grid Agency. Zero red tape.



The resulting complexity in the U.S. means that the solar salesman needs to be a highly trained spreadsheet expert, it takes specialized engineering to design systems to be compliant with the plethora of local building/fire/utility codes, and even the smallest solar installer needs a full-time person just to process all of these documents. The 150,000 established electrical contractors in the U.S. -- who are well-qualified to install rooftop systems -- have virtually no interest at all in dealing with the hassles of installing solar.

What all of this means to U.S. homeowners is that rooftop solar prices are **twice** as high as they are in Germany. Over there you don't need permission to connect to the utility, you don't need a building permit, you don't need any inspections, and you don't need financing (it's automatic with a German bank).

When rooftop solar was in its infancy, some of these regulations made sense. Now that rooftop solar is standardized, simpler, and safer -- and the panels are much cheaper -- this paperwork is unnecessary. This red tape is holding back the industry from creating even more jobs, driving innovation, and building true energy security for our nation.

In the words of Pogo: “we have met the enemy and he is us.” I'm not a fan of government mandates. But we can and should mandate that all the paperwork for a simple, standardized rooftop solar system be distilled down to two pages – as they do in Germany.

Our government is acutely aware of this “death by a thousand papercuts” problem. DOE Secretary Chu launched the SunShot Initiative in an effort to bring U.S. solar prices down even lower than Germany. One of the focal points of this initiative is dramatically reducing the non-hardware “soft costs” of a solar installation related to this blizzard of paperwork. Not surprisingly, it's a bipartisan issue: candidate Romney's Energy Plan also emphasizes reform of energy regulations.

With a five-year payback, solar is a pretty good investment. That's basically where Germany is now — and where we could be in the U.S. if we mandated that our paperwork was as simple as in Germany. Then, almost everyone could afford solar, and generate all the “Made in the U.S.A.” electricity we need.