



Outsourcing Solar Roofs

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GM's new outsourced solar roof

Based on much of what I've read and heard lately about renewable energy sources, I am becoming much more positive about Solar. While it's very small right now, Solar power is one of the few renewables that can scale to meet a large proportion of our energy needs. It is one of the few area that I can envision technology getting better and less expensive over time, unlike the physical limitations of biomass derived energy.

The major barriers for many residential and commercial buildings to place solar on their sun drenched roofs is the upfront costs. People and businesses have budgets for buying the electricity they need, but rarely do they have the resources to make a large upfront investment in something that will take years or decades to pay back. Creative financing and outsourcing to specialized firms is the answer. [That's what GM decided to do:](#)

Since June, the roof of G.M.'s parts warehouse in Cucamonga, Calif., has been host to a photovoltaic array with the ability to generate as much as 1.5 million kilowatt hours of electricity a year. The installation, which G.M. expects will provide half of the building's electricity, cost G.M. nothing.

A solar developer called Developing Energy Efficient Roof Systems -- commonly called Deers -- bought the equipment with money it raised from private financiers. Deers and its investors own the cells; G.M. signed a long-term contract to purchase the solar-generated electricity from them, at a discount to the prevailing rate for electricity in the region.

But this is not just using the current economics to make the deals work, there is an eye to the future where energy costs are expected to increase:

Companies must also persuade their own managements -- or in the case of leased buildings, their landlords -- to allow the installations. And, of course, the economics only make sense to people who think that prices for conventional energy will keep rising.

"We have an incentive to make sure the systems work well, because that's how we make our money," said Jigar Shah, who founded SunEdison in 2003 and is generally thought to have pioneered the solar services model. "But let's face it, we are putting a hole in their roof, so they have to trust we can do it properly. And if you think electricity rates will go down, these long-term contracts don't look good."

and carbon might be taxed and carbon credits traded:

Other factors are involved as well. The parties generally negotiate who will retain potential credits for reducing carbon emissions. When the developers and their backers keep the carbon abatement credits, they generally plan to sell them to companies that might otherwise have trouble complying with rules planned in California and expected elsewhere aimed at limiting global warming.

The electricity users could do that, too, but some of them might also use the credits to offset emissions from other parts of their operations.

But the same logic underpins all of the deals: The electricity users get a clean, reliable source of energy. The developers and their backers get an equally reliable return on their investment -- which can be as high as \$6,000 per kilowatt hour of capacity -- as well as the tax credits and rebates that California and other states offer for renewable energy projects.

Which means that some of this is speculative, but if they are right that energy prices will continue to rise and carbon will become a taxed or traded commodity, they have a long term asset that will deliver positive cash flow and a cleaner environmental image.

As a result many other businesses are getting interested in this roof outsourcing concept as a no upfront cost, zero-risk way to put solar on their roofs.

"The energy is clean, and the fixed-price agreement doesn't fluctuate," Ms. McDonnell of Whole Foods said. "Seeing whether solar would work is now on our check list for every one of our new stores."

This is the model that NYC should embrace for creating more solar roofs. Stimulate local businesses to provide the engineering and financial know-how to building owners interested in allowing solar on their roofs in exchange for long term rooftop leases and fixed electrical prices.



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