



Photovoltaics Blending into the Woodwork

Atlantis Energy Makes Solar Beautiful

By Ed "Redwood" Ring
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When we think of home power, we often still think of roofs covered with rectangular black water heating or photovoltaic modules, propped up with struts at awkward angles to the roof in order to face south and gain maximum exposure to the sun. Aesthetically minded folk might worry about windmills erupting off front lawns everywhere, or diesel generators droning unmuffled through the nights. In short, we might think, "ugly!" So what if home power meant nothing more than grey slate roof tiles, and tinted glass on the windows that face south? What if home power was beautiful instead of grotesque?



Joe Morrissey with roof panels

That is the dream that underlies the success of Atlantis Energy, whose manufacturing plant is in Virginia, and whose sales headquarters is in Sacramento, California. "Why should a photovoltaic array look like a 15 year old's science project?" asks Sales Director Joe Morrissey. The idea of "building integrated photovoltaics" is not unique to Atlantis Energy, for example, BP Solar has begun to develop photovoltaic window glass. But Atlantis Energy brings it all together, creating windows and roof panels that correspond to typical commercial and residential standards, allowing builders to literally replace conventional windows and roofs with units that not only let in light or keep out rain, but create electric power at the same time. And Atlantis Energy products are designed to last 50 years.

While in 2001 using building integrated photovoltaics averages \$12 to \$15 per watt installed, which is 20-50% more costly per watt than standard photovoltaic panels, this money is more than recovered because the photovoltaic units are replacing window and roofing material that would have to be purchased anyway. Moreover, the design of the roof panels, which requires about two inches of airspace underneath the photovoltaic panels, creates an insulating layer that reduces home heating and cooling expense, and also causes snowfall to melt off the roof much faster than off a conventional roof. Similarly, the photovoltaic windows are tinted which can reduce costs for air-conditioning.



"We are working with roofing contractors to have them install the photovoltaic material," says Morrissey, and this goal is reflected in that the roof and window photovoltaic panels are built to the same size specifications as regular roof and

window materials, and also in the simplicity of the electrical connections. "Eighty percent of the work to install one of our roofs is the same work required to install a regular roof, and the remaining 20% is electrical work that any electrician can perform," said Morrisey.

Atlantis Energy may have a great idea, but for now there aren't a lot of competitors in the U.S. Atlantis Energy has done some big jobs in recent years, including the Whitehall Ferry Building in New York City and the First Federal Courthouse in Denver. In 1998 Atlantis Energy was spun off parent company Atlantis Solar Systems AG, located in Switzerland. The U.S. company has about 45 employees at their manufacturing plant in Virginia, and 7 employees at their sales office in Sacramento.

The future of building integrated photovoltaics will continue in the form of high-profile large commercial buildings, and Atlantis Energy is working with top-notch architectural firms such as Skidmore, Owens & Merrill, Cesar Pelli, and Schwartz Architects. But a direction of even greater potential is in the new home market, where entire subdivisions will be built with photovoltaic systems part of the pre-fabricated roofs and windows. Atlantis Energy is currently negotiating with some of the largest homebuilders in the U.S. to supply photovoltaic roofing and window materials for use in residential construction. According to Morrisey, it is already possible (in volume orders) to equip a home with 2 kilowatts of building integrated photovoltaic power for as little as \$20K per house, before any subsidies or rebates.



For photovoltaics to become ubiquitous, it is necessary for them to blend into the woodwork, so to speak. Photovoltaics must migrate from the pages of Popular Science to the pages of Architectural Digest. As photovoltaics become cost-competitive with conventional power, they will also have to become aesthetically pleasing. Atlantis Energy is a pioneer in this trend. As Morrisey points out, building integrated photovoltaics create "multiple values;" electric power, construction material, and thermal insulation, and, they don't make the neighborhood look like a science project.

Investors take note, Atlantis Energy is riding the early swells of a tidal wave. They, like many, are currently looking for strategic investors and "synergistic partners," as the next new economy takes shape. The green age.