

Solar Industry®

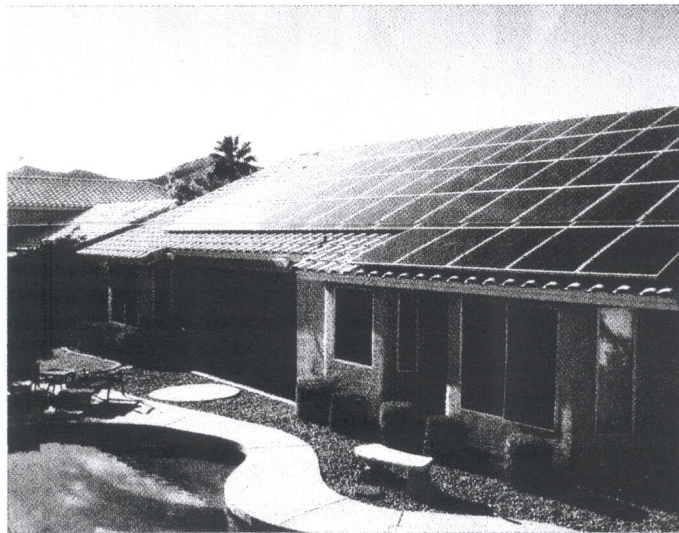
Property-Assessed Clean Energy Catching On Across The U.S.

As the nationwide rollout continues, PACE programs must overcome an emerging threat.

■ Jessica Lillian

First launched as a pilot program by the City of Berkeley, Calif., in late 2008, property-assessed clean energy (PACE) finance has quickly proven its capabilities in increasing the deployment of residential and commercial-scale solar in numerous cities and states across the U.S.

This powerful local finance tool is designed to reduce consumers' up-front costs for solar installations and other energy-related property



A 10.64 kW PV installation by SolarCity in Phoenix. In 2009, Arizona passed H.B.2336, which gave municipalities the right to create PACE programs. Photo courtesy of SolarCity

improvements by allowing property owners to finance the systems through their local government. The borrowed funds are repaid through an additional property-tax assessment over a 15- to 20-year period, while the local government issues municipal bonds that are purchased by banks and investors.

Twenty-three states have now passed PACE-enabling legislation, according to Annie Carmichael, federal policy director at the Vote Solar Initiative, a national advocacy organization.

"When we first heard about PACE, we immediately decided to put resources toward it, because it presents

such an innovative finance option," she says. "Our role has been to focus on enabling legislation and working across states to ensure every state has the authority to have PACE unrolled."

Due to the program's unique finance structure, the benefits of PACE extend to property owners, municipalities and solar professionals alike. Most importantly for the system purchaser, funding is available up front and at a cost typically lower than that of a bank loan, says Daniel Lambert, sustainable energy programs manager for the City of Berkeley.

SYSTEM MONITORING

How To Integrate PV Monitoring Systems

Photovoltaic project size, data requirements and local environmental conditions will affect monitoring decisions.

■ AJ Rossman

Selecting the right remote monitoring solution (RMS) - a data acquisition system with a Web-based user interface - is an important step in ensuring that the return on investment for a solar project is maximized. A properly matched and configured RMS should pay for itself many times over during the life cycle of a typical PV system through improved energy production and reduced operational and maintenance costs. The wrong choice, however, can lead to increased expenses and frustration, as well as lost revenue due to sub-optimal energy production.



AJ Rossman

When selecting an appropriate RMS, the project designer needs to balance advanced technical features and system reliability with initial system cost. For a large commercial or utility-scale PV project, a more sophisticated RMS makes economic sense, because failure to detect or pinpoint underperforming assets in a timely manner can be costly,

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3 ■ NEW & NOTEWORTHY

New California Solar Initiative program guidelines make monitoring systems mandatory for certain solar thermal installations. However, the industry remains divided on whether universally required monitoring will help or hurt the market.



28 ■ INVERTERS

How should inverter users compare suppliers and product performance in order to make the best choices? Metrics include cost per watt, life-cycle energy harvest, service expenses, equipment longevity, balance-of-system costs and other considerations.



48 ■ PROJECT FINANCE

Federal credits and other benefits typically finance at least 40% of the overall capital costs of a renewable energy project. Oftentimes, there are additional incentives available at the state, local or utility level that further reduce the amount of debt or equity needed to complete the plant.

Desertec Initiative Under Way

The multibillion-dollar Desertec initiative proposes the construction of a vast network of solar and wind plants across North Africa and the Middle East to generate about 20 TWh of electricity per year by 2050. About one-quarter of this power would be exported to Europe, and the rest would be used in the countries where the plants are built.

Desertec "could be a fantastic opportunity for African countries," Fatoumata Siré Diakité, Mali's ambassador to Germany, said at a panel discussion on Desertec and rural electrification in Africa that was

held at Intersolar. "We need solar energy, because electricity is a means of development."

The discussion revealed, however, that the links between the Desertec proposal and rural electrification still need to be defined.

Rupert Hinzer, co-founder of the Desertec Foundation, said that the PV and concentrating solar power (CSP) plants will provide a source of income for countries in Africa. He added that "rural electrification is also part of the Desertec concept."

The Desertec Foundation, established in 2008, drew up the initial concept for Desertec. Its plans include a huge grid to bring more than 5 TWh of electricity per year to Europe by 2050, thus supplying about 15% of the continent's power needs. The grid to connect Europe, North Africa and the Middle East alone would cost an estimated €45 billion (about \$55 billion) in investments.

The foundation says that Desertec would provide a competitive source of electricity for Europe in the long term.

Silvia Kreibiehl of Deutsche Bank said that small projects for rural areas in North Africa and the Middle East could be part of Desertec. These projects should be financed by governments, rather than the private investors that would take a lead role for larger plants, she added.

Deutsche Bank is a member of the Desertec Industrial Initiative (DII), which brings together major power companies, solar manufacturers and banks, as well as the Desertec Foundation. DII seeks to "create the conditions for an accelerated implementation of the Desertec concept" in Europe, North Africa and the Middle East, according to its website.

However, Wolfgang Hofstaetter of Kaito - a company that builds small rural power plants in Africa - said at Intersolar that Desertec still needed to "build a bridge" with rural electrification.

Margarete Bause, a member of the Green Party in the Bavarian Parliament, expressed her support for Desertec but warned that the key uncertainty for its future was political in nature. She pointed specifically to the will to support further expansion of renewable energy. Bause added that Desertec could be important in light of a future global agreement on climate change, but it also depends on the EU's relations with North Africa.

Overall, the panelists did not come to a unanimous conclusion on how Desertec could be linked to rural electrification in Africa. In her closing remarks, Siré Diakité invited the panelists and other Desertec players to Mali to meet with their counterparts in Africa for further discussion.

- **Tony Zamparutti**