

Michael Douglas – Healthcare Systems, United States

Harnessing year-round Californian sunshine

California is known as an environmental pioneer, so it is no surprise that the state boasts an acute care hospital with a photovoltaic (PV) solar power generation system that provides 5% of the facility's energy needs. What may be surprising is that the hospital, one of the first in the state to have an operational solar power system, is located in the Imperial Valley in the far south east corner of California, in a town of under 26,000 residents. Appropriately, the facility is named Pioneers Memorial Hospital.

How Pioneers Memorial Hospital became one of the first hospitals in the state to have an operational solar power system is the story of how a positive working relationship between a visionary CEO, a supportive board of directors, a progressive utility and a knowledgeable energy technology provider can produce innovation in unexpected places.

Pioneers Memorial Hospital is a 107-bed, publicly owned acute care facility in Brawley. It is part of the Pioneers Memorial Healthcare District (PMHD). Pioneers Memorial Hospital, which opened its doors in 1950, prides itself on its environment of care and has been recognised for that by outside agencies.

The hospital was awarded a five-star rating for clinical excellence in maternity care by HealthGrades, an independent healthcare ratings company.

Maintaining an optimum environment of care is an ongoing challenge, important for both patients and for staff. In 2006, Pioneers administrators turned to a third party company to help the hospital assess the facility infrastructure, including HVAC equipment and lighting, and overall

operating performance. Part of the assessment involved interviewing key stakeholders such as the chief nursing officer, chief financial officer, director of operations, and the CEO of PMHD, Richard Mendoza.

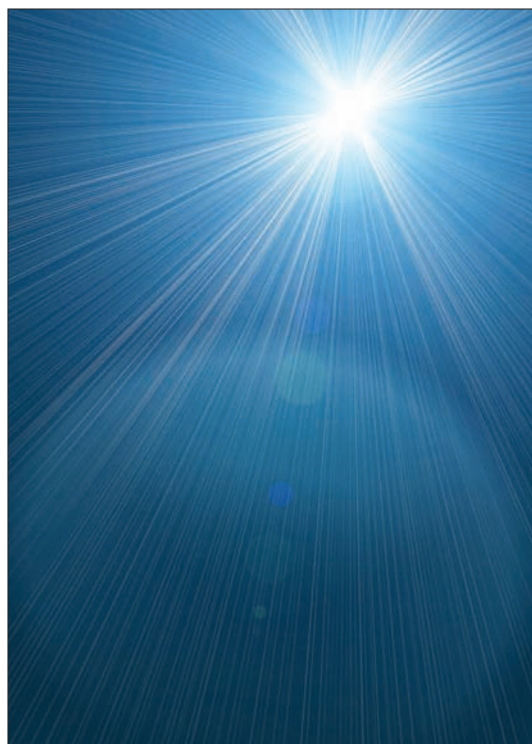
Multi-benefit improvements

Richard Mendoza led the drive to make facility improvements that would enhance patient comfort, allow employees to be more efficient and save on energy costs. He also was concerned about Pioneers being a good neighbour in its community, and out of that grew an interest in green technologies for the hospital, specifically renewable energy technologies.

"When the board and I talked about this, we felt strongly that we had to do this," Richard Mendoza recalled. "It was part of our commitment not only to efficient operations and to energy savings, but to the community. If we become more self-sufficient in meeting our energy needs, that leaves more power available to the community."

The renewable energy technology Richard Mendoza and the board evaluated was photovoltaic panels, which turn sunlight into electricity. This fast-growing solar power technology can be problematic for healthcare institutions.

The first issue is cost since installation is capital intensive. The second issue is space – a large array of panels is needed to produce a significant amount of electricity and setting up that array on or near an existing facility can be difficult. The third issue is available



Solar energy is captured to produce 'green', inexpensive electricity.

sunlight. For Pioneers, this last issue is the only one that did not present a challenge, since the sun shines in California's Imperial Valley throughout the year.

Limited budget

Regarding cost, like most hospitals, Pioneers has a limited budget for capital improvements and a strong interest in safeguarding its operational solvency.

Working with the third-party company to provide energy technology and project management, Pioneers reached out to its local utility, Imperial Irrigation District (IID).

IID Energy has actively pursued renewable energy technologies and currently supports more than 98 solar photovoltaic (PV) installations within its service territory, which included Imperial County and parts of Riverside and San Diego counties.

Pioneers sent IID a grant proposal for a

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solar installation and in 2007 the proposed installation became one of two community demonstration projects, totalling \$1 million, approved by the IID board. "Furthering the use of renewable resources within the Imperial Valley is very important to IID and to our customers. It's an endeavour we take very seriously," said IID board president John Pierre Menvielle.

Pioneers project manager also suggested setting up a power purchase agreement as a way for the hospital to conserve capital and ensure energy savings. Under a PPA, a third party, such as a financial institution, actually owns and operates the solar power installation.

Pioneers contracts to buy a specified amount of power – in this case 100 kW each day or about 5% of the hospital's electricity needs – from the financial institution, allowing the hospital to sign a long-term contract to buy energy at a fixed rate.

The financial institution was also able to take advantage of federal tax incentives for solar power installations, incentives that would have been meaningless to Pioneers since it is a non-profit institution.

The incentives had a direct impact on the issue of the space needed for a photovoltaic panel array. Originally, Pioneers wanted to use the facility's existing rooftops for the planned 630 solar panels. While there were some logistical issues with that plan, the main

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problem with it was that federal tax credits are only available if the solar installation is removable. When they are on a structure such as a carport roof, they are not considered removable.

Instead the hospital was able to install the panels on property it owned, immediately behind the facility.

Though 630 PV panels take up a fair amount of space, the land was not being used for anything else, and the installation is not too visible from the road in front of the hospital. Imperial Valley is an agricultural area and some local residents have already dubbed the installation the "sun farm."

In addition to the solar power installation, Pioneers third-party energy technology provider identified a number of other facility areas where the hospital could save money. Those improvements, which included lighting upgrades, water-conserving technology, and repairing or replacing outdated air conditioning equipment, are being made under a performance contract. Altogether, the provider identified opportunities to save

Pioneers more than \$200,000 a year in energy costs as well as \$174,000 in operational savings. The solar power installation alone will pay for itself in about 10 years at current energy prices.

Positive reaction

Richard Mendoza championed the solar power installation within the Brawley community and among other stakeholders. Now that the installation is online, reaction has been positive. And the door appears to be open to more renewable technologies.

"This is our first step in going green and it's very exciting," observed Aleta Shropshire, president of the PMHD board of directors.

"Built as a partnership, it will save the hospital money, be better for our environment and be a win-win for all the citizens of the Pioneers Memorial Healthcare District, as well as for all of those in Imperial Valley."

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But considerations of the bottom line played a key role.

"I don't necessarily understand all the technology details, but I know that we are collecting energy from the sun and getting to use it for a lot less money than we would be paying otherwise," Richard Mendoza said. ■

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