

Helping Alternative Energy Become the Norm

VA explores unique energy sources to help cut costs.

With increased energy usage, rising prices and a concern for the future, VA is exploring measures to cut energy costs through four major pilot programs currently being tested across the country.

Last year, VA screened its major facilities for the potential to use solar, wind, geothermal and biomass energy and identified 16 potential sites for solar photovoltaic (PV) projects, 15 for solar water heating, six for wind and two for direct geothermal energy systems.

“Hospitals are big users of energy, so whatever VA can do to become a good green neighbor will benefit all of us, both in the short and the long terms,” said Secretary James B. Peake, M.D.

The first of the alternative energy sources are the rooftop PV systems. By harnessing sunlight, these systems reduce electricity costs and provide environmental benefits. After a nationwide search, the VA medical centers in Loma Linda, Calif., and Dallas were chosen to kick off the PV pilot program because of an abundance of year-round sunshine in these areas and the availability of roof space.

The Jerry L. Pettis Memorial VA Medical Center in Loma Linda installed nearly 1,600 solar panels on the facility’s roof. The silicon panels, which measure 4 feet by 3 feet, generate 195 watts of electricity each during daylight hours.

“It’s a good thing to do because we will save on electricity and it’s good for the environment,” said Larry Barrett, the hospital’s energy manager. “You don’t burn as much fossil fuel, so our carbon footprint is reduced.”

The solar panels cover approximately 70 percent of the facility’s 200,000-square-foot roof and are

Manager Dennis R. Halloway. “Part of the reason the city switched to solar was to encourage others to do the same. We would like to be known as an environmentally conscious city and this type of project supports that image.”

The Dallas VA Medical Center installed the second and largest system in VA using a 337-kilo-watt peak (KWp) PV system mounted on the roof of its clinical addition. The PV system consists of 1,728 solar panels tied directly into the hospital’s electrical system that immediately absorb a portion of the building’s electrical consumption. Expected to be up and running in December, the \$2.24 million system takes up approximately 47,000 square feet of rooftop space.

“By using sunlight, a renewable fuel, these systems will reduce the medical center’s electricity costs while providing environmental benefits,” said Dallas VAMC Engineering Chief Byron Abshier.

Funding for both the Loma Linda and the Dallas systems was made possible through the VA Energy Management Task

Force under a Renewable Energy Initiative.

The Dallas VAMC has long been a leader in energy-efficient solutions and innovations. On the Dallas campus, a thermal storage tank sheds energy needed to heat and cool the facility, and biodiesel buses are used to shuttle patients from the Bonham VA



E-85 fueling stations like this one are in place at six VA medical centers across the nation.

EDGARDO CABALLERO

estimated to shave about \$60,000 off its electric bill. As an incentive, Southern California Edison Company is reimbursing the hospital almost one-third of the system’s \$2 million cost, pleasing both VA and the local community.

“I applaud the VA for their forward thinking,” said Loma Linda City

facility to the Dallas VAMC.

Last year, the facility worked to re-commission its solar hot water delivery system to the Community Living Center and is currently constructing a federal E-85 fueling station for alternative-fuel vehicles at both its Dallas and Bonham campuses. E-85 (a fully biodegradable fuel) stations are already in place at six VA medical centers across the nation: San Francisco; Altoona, Pa.; Augusta, Ga.; Cleveland; Danville, Ill.; and Little Rock, Ark.

The use of solar energy for water heating is also being explored at the West Los Angeles VAMC and two facilities in Arizona.

Expected to generate nearly 30,000 kilowatt hours of energy a year, a small wind turbine was installed at the VA medical center in Ann Arbor, Mich., in November. Weighing close to 1,000 pounds, the \$100,000 turbine is 16 feet tall and 3 feet wide. As the wind spins the turbine, a generator in its base sends direct electrical current through several boxes, transforming the power into alternating current to be used by the hospital.

The hospital also recently installed new energy-efficient air conditioning and modified existing air-conditioning generators to save more than 811,000 kilowatt hours of energy and almost \$70,000 a year. Lighting in the facility's parking decks was replaced with LED technology, slashing energy consumption in half and saving an additional 78,000 kilowatt hours of energy a year.

In addition to alternative energy sources, VA facilities have strived to become ENERGY STAR compliant. In 1992, the EPA introduced the ENERGY STAR program as a voluntary, market-based partnership to reduce greenhouse gas emissions through energy efficiency.

In October, the Michael E. DeBakey VA Medical Center in Houston earned the prestigious ENERGY STAR endorsement, which means the facility uses on average 40 percent



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Members of the Martinsburg, W.Va., VA Medical Center's "Green Kitchen" project team; the project was initiated to help the facility's Nutrition and Food Service with energy and water conservation and waste management. Innovations include a dishwashing system that uses green chemicals.

less energy and releases 35 percent less carbon dioxide into the atmosphere than a typical building.

To maximize energy efficiency and achieve the rating, the facility replaced chillers and cooling towers with variable speed drive units, upgraded general lighting, implemented an energy management program, added a full-time energy manager, and provided energy awareness training to all new employees. Hospital officials estimate that the cost-effective improvements have saved \$5.5 million in annual energy bills.

"Through this achievement, we have demonstrated our commitment to environmental stewardship while also lowering our energy costs and saving taxpayer dollars," said Director Edgar L. Tucker.

The VA medical center in Martinsburg, W.Va., started a "Green Kitchen" project to reduce Nutrition and Food Service's use of natural energy. The project's goals were sustainable food and beverage procurement, energy conservation, water conservation and waste management. To help, the kitchen purchased some of their produce from a local organic farm under its "Farm to Hospital" program.

"It keeps us in touch with our community and those who are raising our food," said Sandy Spicher, the

facility's administrative dietitian. "The vegetable prep staff also likes working with the farm-raised produce and can tell a difference in the freshness."

Other innovations include a new dishwashing system that uses green chemicals and an efficiency monitor to conserve water. In addition, the kitchen installed a new pulper, decreasing food waste by approximately 75 percent.

The Huntington, W.Va., VA Medical Center received their third Partners for Change Award for environmental excellence this year. The award recognizes facilities that continuously work to improve and expand programs to eliminate mercury, reduce waste and prevent pollution. The VAMC has eliminated mercury in patient care areas, achieved a recycling rate greater than 50 percent and has an infectious waste ratio of less than 3 percent.

"This award affirms the medical center's hard work and determination to protect the environment and public health," said Edward H. Seiler, medical center director. "We have made a commitment to reduce waste and recycle in an effort to create a better, safer, greener workplace and community." **VA**

By Amanda Hester