

Upcoming Projects in Sustainability

VA has renewable energy projects underway at more than 40 sites across the country.

St. Cloud VA Medical Center

Project Description: In mid-2011, St. Cloud VA Medical Center will complete the installation of a ground source heat pump system. These systems use the earth's core to provide steam and hot water to the facility. St. Cloud's system will generate approximately 1,640,000 kWh per year, supplying up to 19% of the site's electricity usage, resulting in 1,363 metric tons of carbon dioxide per year.



Nearly all the bore holes are complete for the ground source heat pump system at St. Cloud VA Medical Center.

Additional Alternative Fueling Stations

VA has increased alternative fuel use by an order of magnitude, from 78,168 gallons of gasoline equivalent (GGE) to 778,946 GGE, over the period 2007 to 2009. VA will continue this increase in alternative fuel use by constructing up to 91 alternative fueling stations. These stations will serve approximately 20% of VA's alternative fuel vehicle fleet and help VA reduce its petroleum use.

VA Facilities with Existing Alternative Fueling Stations	
Arkansas	Eugene J. Towbin VA Medical Center
California	Martinez Outpatient Clinic
California	Menlo Park VA Medical Center
California	San Francisco VA Medical Center
Georgia	Charlie Norwood VA Medical Center
Maine	Togus VA Medical Center
Ohio	Louis Stokes Cleveland VA Medical Center
Ohio	Chillicothe VA Medical Center
Ohio	Dayton VA Medical Center
Philippines	Manila Outpatient Clinic
Pennsylvania	Coatesville VA Medical Center
Texas	Dallas VA Medical Center

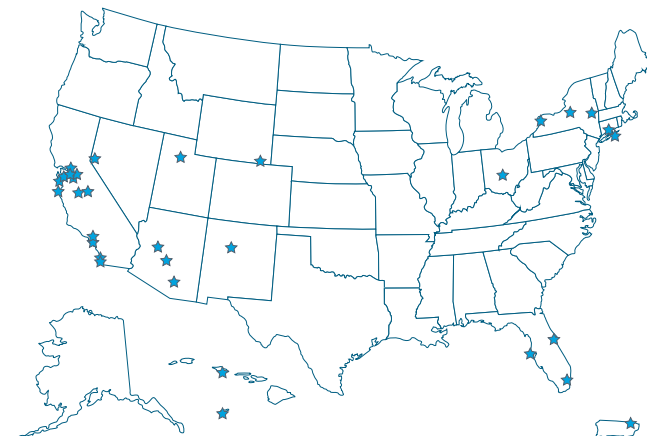
Combined Heat and Power (CHP) Systems

VA will complete installation of five renewably fueled CHP systems over the next 24 months at: Togus, ME; White River Junction, VT; Canandaigua, NY; Murfreesboro, TN; and Chillicothe, OH. In addition, VA is installing a zero-emissions fuel cell-based CHP system at Loma Linda, CA. Such systems comprise one of VA's key strategies for increasing renewable energy consumption and decreasing greenhouse gases. For example, the CHP energy center at VA's Mt. Home, Tennessee medical center, fueled with processed waste methane from a nearby municipal landfill, contributes 0.5 % to VA's renewable energy goal and saves approximately 11,500 metric tons of carbon dioxide per year.



New cogeneration systems will produce similar benefits to the existing plant at the Mt. Home VA Medical Center.

Upcoming Solar Projects at 31 Sites Across the Nation



The Department of Veterans Affairs *A Government Leader in Sustainability*

Ambitious Targets Inspire Success, Honor Veterans

The Department of Veterans Affairs (VA) recognizes that to best care for our nation's Veterans and their families, we must minimize our environmental and energy-related impacts. It's a responsibility that VA embraces and is proactively addressing. VA healthcare facilities operate energy-intensive equipment around the clock. In addition, VA's mission is expanding to reach more Veterans in more locations.

VA continues to lead the federal government in sustainable practices. To address its challenges and focus sustainability efforts, VA relies on the leadership of its Department-level Green Management Program. The five program areas are energy efficiency and renewable energy, fleet, environment, sustainable building, and greenhouse gas management.

VA consistently meets or exceeds its sustainability mandates. We have set ambitious targets for greenhouse gas reduction (30% by 2020) and increased renewable energy use (15% by 2013). VA is meeting these goals and targets by:

1. Aggressively implementing energy and water conservation measures.
2. Increasing the use of renewably fueled on-site electricity, steam, hot water, and chilled water.
3. Tuning-up buildings to improve energy efficiency, comfort, and indoor air quality.
4. Increasing the use of alternative fuels in VA fleet vehicles.



Water conservation through xeriscaping at Fort Bliss National Cemetery (El Paso, TX).

Strategies for Sustainability

This is how VA plans to meet our goals:

- Invest in energy efficiency and renewable energy projects.
- Install meters to monitor energy and water usage.
- Maintain facility- and regional-level energy and environmental managers.
- Change VA's culture through our Green Routine initiative, an education and outreach program that encourages staff to curtail energy use, find creative ways to increase recycling, and reduce our environmental footprint.



VA has brought over 13 percent of existing building square footage (6 percent of buildings) into compliance with the Guiding Principles for High Performance and Sustainable Buildings. Eighteen facilities are Green Globe certified at the three-Globe level, three facilities at the two-Globe level, and four additional facilities are LEED- certified, such as the LEED-Gold rated VBA Boise Regional Office pictured.



For More Information Contact
U.S. Department of Veterans Affairs
Green Management Program
GreenVA@va.gov

or Visit:
<http://www.va.gov/oaem/greenmanagement>

Models of Sustainability from Coast to Coast

VA's growing portfolio of renewable energy now includes solar, wind, and cogeneration projects from Maine to Hawaii.



Carport-mounted photovoltaic system at the West Texas VA Medical Center.

West Texas VA Medical Center

Project Description: In June 2010, we completed the installation of a 185 kW photovoltaic system at the West Texas VA Medical Center in Big Spring. The system consists of 900 panels atop four newly-constructed carport structures in an employee parking area. The system will generate approximately 250,000 kWh per year, reducing greenhouse gases by 150 metric tons of carbon dioxide per year. This project will save the medical center approximately \$20,000 per year in utility costs, by supplying up to 4% of its electricity load.

Southern Arizona VA Medical Center

Project Description: In August 2010, we completed the installation of a 302 kW photovoltaic system at the Southern Arizona VA Medical Center in Tucson. The system consists of 1,372 sun-tracking panels. The tracking system adjusts the tilt of the solar panels to follow the sun's movement throughout the day. The system will generate approximately 610,000 kWh per year, resulting in a greenhouse gas reduction of 364 metric tons of carbon dioxide per year. This project will save the medical center approximately \$43,000 per year in utility costs, by supplying up to 3% of its electricity load.



Crystalline silicon photovoltaic modules recently installed at the Southern Arizona VA Medical Center.

Massachusetts and San Joaquin Valley National Cemeteries

Project Description: In September 2010, VA completed a 50 kW wind turbine at the Massachusetts National Cemetery in Bourne. It will generate approximately 80,000 kWh per year, resulting in a greenhouse gas reduction of 34 metric tons of carbon dioxide per year. This wind turbine will save the medical center \$5,600 per year in utility costs by supplying up to 97% of its electricity load.

By the end of the year, VA will have completed a 136 kW solar PV system at the San Joaquin Valley National Cemetery. This system will produce up to 73% of the cemetery's annual electricity usage.

Northern California Healthcare System

Project Description: VA celebrated the opening of an ethanol (E-85) fueling station at the Martinez campus of the VA Northern California Healthcare System in February 2010. This E-85 fueling station is the thirteenth in operation for VA. We installed a 5,000 gallon E-85 storage and dispensing station that is wireless, self-contained, and powered by an 800 kW solar photovoltaic system. This healthcare system has a fleet of 180 vehicles, which includes 103 flexible fuel (or E-85 capable) vehicles and two hybrid vehicles.



The Martinez campus uses E-85 fuel from this station in its 103 flexible fuel vehicles.

Putting it in Perspective

- 1 metric ton of carbon dioxide = emissions from 112 gallons of gasoline
- 1 U.S. household consumes 10,800 kWh of electricity per year.



50 kW wind turbine at Bourne National Cemetery will supply virtually all of the cemetery's annual electricity.