

# Amarillo VA Medical Center

## TEEA 2017 Winner: Pollution Prevention



*Integrating solar power with thermal storage saves money and energy.*

The Amarillo Veterans Affairs Medical Center became the first VA Medical Center to combine solar power and thermal storage technologies to generate energy and export excess energy back to the local grid.

First, the center constructed an ice thermal storage system designed to shift the medical center's air conditioning peak load from daytime to nighttime. The center produces up to 32,000 gallons of ice slush each night, which it uses during the day to cool the medical center. The thermal storage system alone reduced the center's energy consumption drastically. However, the VA didn't stop there!

To maximize energy reductions the center constructed parking areas covered by photovoltaic (PV) panels. The facility's semi-arid climate ensures the panels receive plentiful sunlight, which is ideal for solar PV energy generation. Additionally, using covered parking as the mounting structure for the PV panels offers the bonus of shading patients' vehicles from the hot sun.

Teaming these two technologies has allowed the facility to produce approximately 3.5 million kilowatt-hours annually, over one-third of the center's total energy consumption. When the thermal storage system runs in tandem with the PV system, the center can defer daytime air conditioning, which fulfills the mission's objective of net-zero energy consumption during peak sunlight. The diminishing air conditioning load allows the facility to export between 30,000 and 100,000 kilowatt-hours back to the utility company each month, which is credited to their bill.

Additionally, the center received a renewable energy rebate from the local utility provider for more than \$400,000. The PV energy generation alone saves the facility approximately \$245,000 on their

electric bill each year.

Aside from these economic and environmental benefits, the project is also inspiring other VA centers to establish similar programs. PV-covered parking has been duplicated at more than 25 VA Medical Centers, and projects integrating both technologies have been adopted by three other VA facilities. This program is improving the environment of the great state of Texas, while also saving money on electricity, which can go a long way toward quality-of-life investments for those who have selflessly served our country.