



Yavapai - Apache Nation Camp Verde, Arizona

Design/Build Solar Photovoltaic Installation

The Yavapai-Apache Nation issued a nationwide Request for Proposals for a Commercial Solar System in Camp Verde, Arizona. The objective of the Nation was to ensure a constant source of power at the Yavapai-Apache Medical Center in the event of an outage, reduce their electrical load and, as a consequence of this reduction, help preserve precious natural resources.



APS Energy Services was awarded the project and designed and constructed a 30 kW solar covered parking system to mount the panels, as well as, provide the Medical Center guests and staff with shade for forty-four parking spaces.

The basic structural design of the system consists of two steel cantilevered carport canopies and uses Uni-Solar® photovoltaic (PV) laminates bonded to standing-seam metal roof panels as the decking material for the canopies.

This technology is lightweight, unbreakable, durable, vandal resistant and has better temperature coefficients than crystalline PV. The design also provides more shaded area per kW than crystalline PV, and the near-horizontal orientation optimizes output in summer months.



Additional design elements include the following:

- ❖ In the event of a utility outage, the building's critical loads will continue to operate for a short time (up to approximately 30 minutes) using energy from the UPS battery bank.
- ❖ A propane fueled generator supplies power to the entire building (not just the critical loads) and when it comes on, it will supply all the power needed in the building and recharge the batteries in the UPS.
 - If a power outage occurs during the day, the PV will supply the available power from the sun into the internal building electrical system; at night, all power to operate the building would come from the generator.



On behalf of the Nation, APS Energy Services negotiated the procurement of Green Credits, resulting in a substantial rebate. However, more importantly, APS Energy Services was able to negotiate the future sale of excess power back to the grid which will provide an ongoing profit center for the Nation.

To date, the total annual energy savings for the Yavapai – Apache Nation project is:

- ❖ 51,000 kWh

These savings translate to the following environmental benefits:



7

Passenger cars not driven for one year



4,157

Gallons of gasoline saved in one year



.3

Acres of forest preserved from deforestation in one year