

## PV Systems—Logistical Considerations

### Practical Solutions for Remote Site Power

The engineer installing equipment in remote areas has a unique challenge - to balance the placement of equipment in an optimized site from a performance standpoint with the various factors associated with the installation.

Consider the telecom engineer responsible for siting repeater towers. Line-of-site requirements often dictate the repeater be placed at the highest possible point, which can be a mountaintop.

However, this location can be formidable when planning how to provide and maintain power for the equipment. The engineer might decide to sacrifice



System exposed to severe winter conditions on Mt. St. Helens, WA

the optimum site for one that offers fewer logistical challenges.

Photovoltaics (PV or solar electricity) eliminates the balancing act for the engineer. PV is an excellent distributed power generation source that can be located virtually anywhere, on land or sea, alongside the load equipment it is powering. A well-designed PV system is straightforward to install and extremely reliable.

SunWize designs, manufactures and installs remote-site PV systems. To insure the PV system leaving our factory works correctly, we pay strict attention to specific design issues for each project such as:

- Climate
- Geography
- Transportation techniques
- Installation capabilities
- Load criticalities



PV system installed in Lassen Volcano National Park, CA, at 10,500 feet.

After all, our systems are going into extremely rugged, remote sites and our customers cannot afford a system failure.

When you face the challenge of powering equipment in remote site locations, consider a SunWize power system solution.



Mountain area in Tajikistan accessible by helicopter.

### Examples of Specific Project Design Considerations

#### Project One:

A critical cellular repeater site is located on a 13,000 ft high mountain pass in Afghanistan. The site is a link between two major population centers and is inaccessible at times due to extreme weather.

#### SunWize Solution:

SunWize designed breakdown PV array support structures easily erected on site and redundant PV subarrays, each with a dedicated controller and all system electronics. Each crate used in shipping met strict size and weight guidelines for transport into Afghanistan by air and then by truck.

#### Project Two:

A major rural telephony initiative is underway in the Caribbean involving hundreds of pay telephones. Since their utility grid system is rapidly expanding, both grid-tie and off grid power is required.

#### SunWize Solution:

SunWize is providing 12-volt DC power for the grid-tied sites and systems with solar arrays for the remote sites. We provided interchangeable parts between grid-tied and off-grid systems, making it easy to install either design as the dynamics of the sites change.

#### Project Three:

A chemical refining plant on the Houston ship channel needed to add surveillance cameras to remote dock areas. However, the docks are located too far from the main complex to use grid power.

#### SunWize Solution:

SunWize designed a 240 watt solar array for each camera. The arrays and cameras are mounted to existing eight and twelve-inch diameter poles. Batteries are able to power the security systems for up to ten days with no sun to assure continuous system operation.

#### Corporate Headquarters

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