RE-Powering America's Land:
Siting Renewable Energy on Potentially Contaminated Land and Mine Sites
Nellis Air Force Base, Nevada Success Story

A Bright Future for Nellis Air Force Base

United States Environmental Protection Agency

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EPA is encouraging the development of renewable energy facilities on potentially contaminated land and mine sites. This series of stories highlights successful projects and the benefits of siting renewable energy facilities on potentially contaminated land and mine sites.

Site Description

Nellis Air Force Base (Nellis AFB) is a 14,000-acre facility located northeast of Las Vegas encompassing the Frenchman and Yucca Flats. Nellis AFB provides advanced combat training and is home to every type of aircraft in the United States Air Force (USAF) inventory. The property itself is divided into three main areas, which include the airfield and mission support functions, munitions, and military housing. In addition, the property contains the Nevada Test and Training Range.

Property History

The 140-acre solar facility site includes a 33-acre former landfill. Operational from 1958 to 1966, the landfill contained debris from building demolition, paint sludge, wood buildings and other solid waste. In 1996, the landfill was capped with native soils and groundwater monitoring wells were installed for sampling every five years. Contaminants of concern were found in the 2005 sampling, including polychlorethene (PVC) and trichlorethene (methyl chloroform). The project's 2006 environmental impact statement determined that the landfill area, along with the adjacent desert land, was suitable for housing the solar project.

Renewable Energy Development

Working with the Nevada Power Company, SunPower Corp., and MMA Renewable Ventures LLC, the USAF developed a solar photovoltaic (PV) system powerful enough to provide a quarter of the entire base's energy needs. The solar PV system consists of 72,416 solar panels on ground-mounted, fixed-tilt systems engineered to follow the path of sun. Generating 14 megawatts (MW), the PV system covers 140 acres, including the 33-acre capped landfill.

Constructing part of the solar PV system on top of this former landfill allowed Nellis Air Force Base to benefit and creatively transform land that could have remained vacant for decades, maximizing the project's cost effectiveness. USAF used funds from private-sector companies that received federal tax credits for solar power investment, including Citibank, Allstate, John Hancock Financial Services and Merrill Lynch. From June to December 2007, SunPower constructed the $100 million PV system.

MMA finances, owns and operates the PV system under a 20-year contract with the USAF. In return, the USAF is able to take advantage of power purchase agreements allowing Nellis to purchase electricity at a guaranteed fixed rate. The solar PV system saves the USAF an estimated $1 million annually, and reduces carbon dioxide emissions by 24,000 tons each year.

QUICK FACTS:

Location:	EPA Region 9, Clark County, Las Vegas, NV
Property Size:	140 acres
Site Ownership:	U.S. Air Force
Former Use:	Military base infrastructure and housing, weapons testing, landfill
Cleanup Type:	State solid waste management unit (RCRA)
Contaminants:	Polychlorethene (PVC), trichlorethene
Type of RE:	Solar PV (utility scale)
RE Capacity:	14 MW
Project Cost:	$100 Million (Estimated)
Key Partners:	U.S. Air Force, SunPower Corporation, Nevada Power Company and MMA Renewable Ventures LLC
Current Status:	Complete and operational

PROJECT HIGHLIGHTS:

- Generating 14 MW, the PV system covers 140 acres, including the 33-acre capped landfill at Nellis AFB.
- Private sector companies that financed the project are receiving federal tax credits for solar power investment.
- Through a 20-year power purchase agreement, Nevada Power Company provides power at a guaranteed fixed rate in return for solar renewable energy certificates for the solar energy put into the electrical grid.
- The solar array generates enough energy to power 2,350 homes, saving Nellis AFB $1 million in electricity annually and reducing its yearly greenhouse gas emissions by 24,000 tons.

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For more information, visit: www.epa.gov/renewableenergyland or contact cleanenergy@epa.gov