

NAS NORTH ISLAND - NAVY REGION SOUTHWEST NAVY ENVIRONMENTAL LEADERSHIP PROGRAM

CONSERVATION

SAN CLEMENTE ISLAND PHOTOVOLTAIC ARRAY

LEAD ACTIVITY

Naval Auxiliary Landing Field (NALF) San Clemente Island
Fleet Area Control and Surveillance Facility (FACSFAC)
Southwest Division, Naval Facilities Engineering Command

STATUS

Active

MISSION

Replace stand-alone diesel generator with a photovoltaic (PV) diesel hybrid system

REQUIREMENT

Energy Policy Act of 1992 and Executive Orders 12902 and 13123.

DESCRIPTION

In the early 1990's, the Navy identified a number of sites powered by stand-alone diesel generators as candidates for photovoltaic (PV) diesel hybrid systems. The Fleet Area Control and Surveillance Facility Detachment, Southern California Offshore Range (FACSFAC DET SCORE) Electronic Warfare Simulator (EWS) site on San Clemente Island (SCI) was one of the sites selected.

In a partnership with Naval Air Weapons Station (NAWS) China Lake, NAVFAC SWDIV and FACSFAC SCORE installed an 80 kilowatt (kW) stand alone PV array, a 2500 kW battery array, and a 175 kW inverter at the REWS site. The PV system reduced the electrical load requirements at the REWS site and replaced four of the six diesel generators. Only one 200 kW generator remains for backup. The generator and grid power are used when the battery charge is low, such as when PV is unavailable due to lack of sun or the site load exceeds available battery/array power. The PV system produces no air pollution or noise, and requires no transportable fuels. Because the energy source for PV systems (sunlight) is free and abundant, the systems can provide electrical power while avoiding the cost of petroleum fuel.

BENEFITS

- Reduces fossil fuel usage
- Reduces amount of pollutants entering the atmosphere
- Decreases potential for diesel fuel spills

- Avoids use of approximately 12,166 gallons of diesel fuel annually by displacing the diesel generator operation

ACCOMPLISHMENTS / CURRENT STATUS

Date	Activity
OCT 1995	Selected PV contractor
JUN 1998	80 kW PV system operational
JUN 1999	Modified automated control system installed

FUTURE PLAN OF ACTION & MILESTONES

Date	Activity
Ongoing	Continue to look for application of PV and other resources at San Clemente Island (SCI)

COLLABORATION / TECHNOLOGY TRANSFER

The SCI PV system was the first large scale PV system installed in the NRSW Metro Area. Many of the lessons learned during procurement, design, and installation have been incorporated into subsequent PV and other renewable systems installed within the region.

BIBLIOGRAPHY

None Available

RELATED GOVERNMENT INTERNET SITES

- [DOE Office of Energy Efficiency and Renewable Energy](#)
- [Utility Photovoltaic Group \(UPVG\)](#)

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