Covering the Bases
Helping our military with energy security, resiliency

Kurt Myers assesses wind systems at Utah’s Tooele Army Depot.

Concentrated solar array at Utah’s Tooele Army Depot
The Department of Defense (DOD) has embraced renewable energy as essential not only to reducing dependence on foreign oil and addressing climate change concerns, but also to improving security and reducing costs. Idaho National Laboratory is working with DOD all over the United States and abroad, providing technical input and guidance for more than 25 projects.

In north Texas, INL has provided development, design and implementation support for the Pantex Wind Project, the largest federally owned wind project to date. The 11.5-MW project supplies more than half of the Energy Department facility’s electrical power.

On a smaller scale, here are some of the projects in which INL has provided expertise and support …

### Joint Region Marianas/Naval Base Guam
December 2014, U.S. Navy, Guam
**Nature of Project:** Solar, battery storage
**Purpose of Project:** Integration and field-testing of utility-scale lithium-ion (Li-ion) battery storage and solar photovoltaic systems
**INL Contribution:** Design and testing of microgrid system

### Naval Base Ventura County
**Nature of Project:** Wind, battery storage
**Purpose of Project:** Integration of wind energy and battery storage into San Nicolas Island power system
**INL Contribution:** Grid/system development and integration guidance of new 700-kW wind energy, and testing of potential zinc-bromine battery storage systems

### Naval Air Station North Island
**Nature of Project:** Wind, battery storage
**Purpose of Project:** Feasibility planning and improvements to San Clemente Island power system
**INL Contribution:** Analysis and design of hybrid island/grid system improvements including three new 900-kW wind turbines

### Fleet Activities Sasebo
January 2015, U.S. Navy, Sasebo, Japan
**Nature of Project:** Wind
**Purpose of Project:** Development of first wind energy project in Navy Far East region
**INL Contribution:** Feasibility assessment and design/development support for 2-5 MW of wind energy; other wind energy feasibility/development assessments

INL’s Kurt Myers checks the load history on a diesel generator at Utah’s Dugway Proving Ground.
Vandenberg Air Force Base
**Nature of Project:** Study
**Purpose of Project:** Technical and investment planning on major projects affecting power/energy options and energy security
**INL Contribution:** Analysis of systems, technical and economic concerns, recommendations for improving power distribution and delivery

Tooele Army Depot
2015-2016, U.S. Army (AMC), Tooele, Utah
**Nature of Project:** Wind, solar, battery storage
**Purpose of Project:** Assist design review, planning and analysis for 1.7 and 1.5-MW wind project, 1.5-MW concentrated solar project upgrades, power system study and microgrid
**INL Contribution:** Interconnection and net metering agreements with utility, technical assistance, design review, and microgrid planning

Dugway Proving Ground
April-June 2015, U.S. Army (IMCOM), Dugway, Utah
**Nature of Project:** Solar
**Purpose of Project:** Identification of potential for solar photovoltaic, wind, geothermal, microgrid and energy storage systems
**INL Contribution:** Interconnection agreement with utility, design review and system integration for 2-MW solar photovoltaic project

Atlantic Undersea Test and Evaluation Center (AUTEC)
June 2014, U.S. Navy, Andros Island, Bahamas
**Nature of Project:** Wind
**Purpose of Project:** 1-MW turbine installed in remote location to supplement four diesel generators, reducing costs and meeting clean energy requirements
**INL Contribution:** Consultation on control and system improvements

F.E. Warren Air Force Base
**Nature of Project:** Wind
**Purpose of Project:** Wind turbines expected to save the Air Force more than $3 million over the next 20 years
**INL Contribution:** Design and technical oversight, basic support for base interfaces, energy security test

Soto Cano Air Base
2014-2018, U.S. Army (IMCOM), Honduras
**Nature of Project:** Solar photovoltaic
**Purpose of Project:** Improve reliability of mission-critical loads by connecting generators on microgrid using existing distribution networks
**INL Contribution:** Technical consultation in development of solar energy project

Army Reserve
2015-2018, U.S. Army, American Samoa
**Nature of Project:** Solar
**Purpose of Project:** Improve reliability of mission-critical loads by connecting solar to existing distribution network
**INL Contribution:** Technical consultation in development of solar energy project

Utah’s Tooele Army Depot includes both wind and concentrated solar energy.
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