# REopt Screenings Catalyze Development of Hundreds of Megawatts of Renewable Energy for Federal Agencies

The U.S. Department of Energy's (DOE's) Federal Energy Management Program (FEMP) offers project assistance to federal agencies, which often begins with a desktop screening to develop a prioritized portfolio of renewable energy project opportunities. FEMP uses the National Renewable Energy Laboratory's (NREL's) REopt energy planning platform to quickly and efficiently screen potential renewable energy opportunities at a single site or across a range of sites. REopt helps organizations prioritize the most economically and technically viable projects for further study and identifies the size and mix of technologies that meet the organization's goals at minimum cost, along with the optimal operating strategies.

Renewable energy projects identified by a REopt analysis can help federal agencies realize energy cost savings and energy stability and have positive local economic impacts. According to the U.S. Navy's Resilient Energy Program Office, renewable energy projects in procurement in fiscal year (FY) 2016 will create an estimated 9,000 jobs and $1 billion in economic impact during construction and an estimated 240 jobs and $23 million in enduring annual economic impacts (see Figure 1).

"NREL's REopt analysis has helped the U.S. Forest Service evaluate the suitability of renewable energy options for 120 facilities. The REopt analysis was a big step forward in moving toward our energy management goals."

— Myra Williamson, U.S. Forest Service

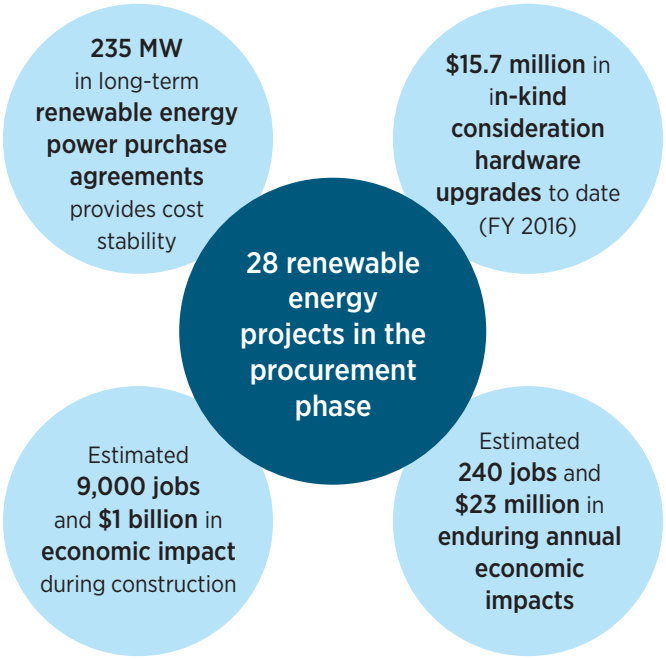


Figure 1. Navy renewable energy procurements are projected to save energy costs, improve energy stability, support infrastructure upgrades, and impact the local economy.[1]

"The mission of the National Park Service [NPS] is to protect our natural and cultural resources for future generations. The use of renewable energy at our facilities is a key strategy to meet this mission. NREL's REopt tool has allowed us for the first time in our history to better understand opportunities at NPS facilities to deploy renewable energy."

— Shawn Norton, NPS

## FEMP Project Development Assistance Steps

1. REopt desktop screening of an agency's sites to develop a prioritized portfolio of renewable energy project opportunities
2. Project feasibility studies at locations with the most promising opportunities
3. Project assistance, including acquisition strategy development, request for proposal/proposal review assistance, contract assistance, design review assistance, and construction assistance, for projects that are viable after detailed analysis
4. Assistance with acceptance testing and commissioning, operations and maintenance, measurement and verification, and performance issues after systems are installed.

1. Kliem, John. "Charting the Course to Resiliency." Navy Resilient Energy Program Office presentation at the 2016 Energy Exchange, Providence, Rhode Island, August 9, 2016. Accessed December 2016: *http://www.2017energyexchange.com/wp-content/tracks/track2/T2S2_Kliem.pdf.*

## REopt Helps Federal Agencies Evaluate Renewable Energy Projects

REopt has been used to evaluate opportunities at more than 8,000 sites in the federal government and private sector and helps organizations focus limited resources on projects with the highest chance of success.

The U.S. Army and Navy used the REopt screening process to develop a portfolio of on-site, cost-effective projects that contribute to their energy goals. The Army and Navy invested in project development at many of the sites identified in REopt, which ultimately led to procurement actions for approximately 260 MW of renewable energy on federal lands.

While Figure 2 highlights successful projects, those projects that REopt screened out are just as important as the feasible projects identified. Identifying flaws and excluding nonviable projects early allows agencies to focus limited resources on pursuing and deploying the projects with the highest chance of success.

Staff supporting the U.S. Army Office of Energy Initiatives (OEI) noted, "The Army [saw] high value from REopt findings when it came to deactivating projects. [We] used the results as an authoritative source to lay down a project and move on. The Army views walking away from bad deals to be just as valuable—if not more so—than signing a good deal."

### Photovoltaic Array at the Army's Fort Huachuca Recommended by REopt

The REopt screening for OEI identified Fort Huachuca as a top candidate for photovoltaics (PV). After conducting a more detailed evaluation of the site, the Army awarded a contract to Tucson Electric Power (TEP) to build an 18-MW PV system in 2014. At the time of construction, this was the largest U.S. Department of Defense solar array on a military installation, representing about 25% of the annual installation electricity requirement of Fort Huachuca.

The project is owned and operated by TEP and developed in partnership with OEI, Fort Huachuca, the General Services Administration, and E.ON Climate and Renewables. The project also promotes the Army's energy security and sustainability strategy to position the Army to enhance its current and future capabilities, readiness, and performance.

### REopt Identified a New Solar Project Opportunity at Marine Corps Base Camp Lejeune

NREL worked with the Navy and U.S. Marine Corps to conduct a renewable energy screening of 91 Navy and Marine Corps bases. Marine Corps Base Camp Lejeune was identified as a top opportunity in this screening, and following a more detailed site assessment and feasibility study, the Navy and Marine Corps developed a 13-MW (AC) solar facility at Camp Lejeune in partnership with the utility Duke Energy. The facility is owned and operated by Duke Energy and began operating in 2015.

The project is helping Duke Energy further its commitment to renewable energy, diversify its energy mix, and meet the North Carolina Renewable Energy and Energy Efficiency Standard. The project provides greater resource availability and diversity to Camp Lejeune while helping the Navy meet its 1-GW renewable energy goal.

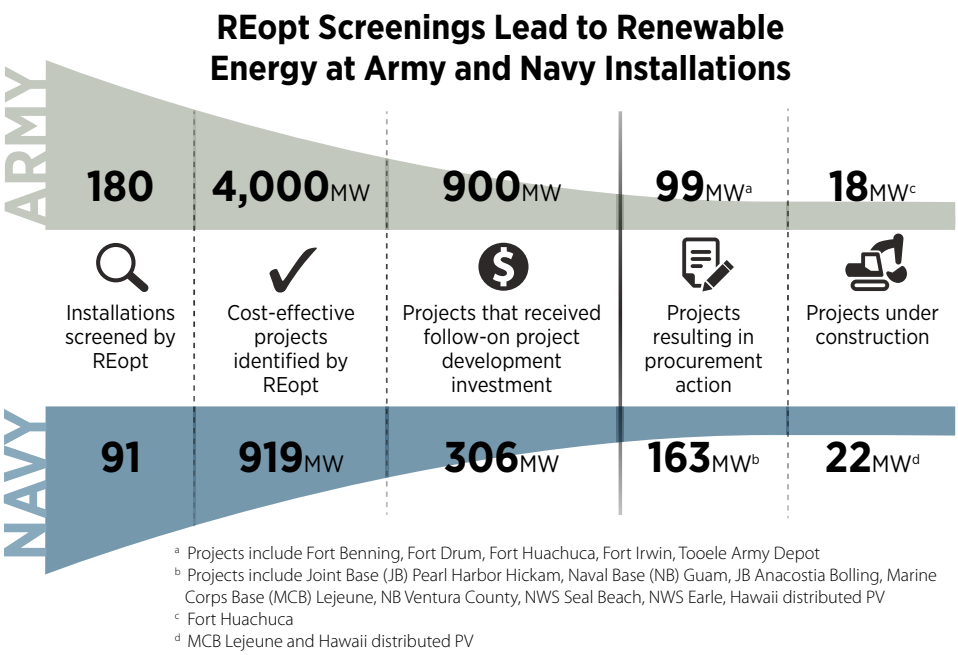


Figure 2. REopt screenings lead to renewable energy projects at Army and Navy installations.

## Learn More

For more information about FEMP's renewable energy project assistance services, visit *energy.gov/eere/femp/federal-renewable-energy-project-assistance*. For general questions about FEMP assistance, contact *fempta@ee.doe.gov*.

Learn more about NREL's REopt energy planning platform at *nrel.gov/tech_deployment/tools_reopt.html*.



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