

FY 2018 Energy Resilience and Conservation Investment Program, Congressional Notification

FY 2018 ERCIP Project List

10 U.S.C. 2914. Energy resiliency and conservation construction projects

Project No.	Location	State	Project Description	Project Cost (\$000)	SIR*	Payback	Project Type	Justification	M&V*** Cost (\$000)
<b>Army</b>									
80762	Tooele Army Depot	UT	Install 2 MW Solar PV	\$6,895	1.6	11.7	Energy Resilience	This project will allow for the redistribution of electricity to all critical facilities at Tooele Army Depot (TEAD) North by constructing a 2MW PV system that will feed into the existing installation microgrid. These critical facilities include Ammunition Operations (Core Mission), Security, Communications, Emergency Services/Fire Dept., Emergency Operations Center (EOC) and Command Group. The array is projected to provide 30% of the Depot's annual energy requirements, thus lowering the requirement for grid energy and contributing to energy resilience.	\$22
86353	Soto Cano Air Base	Honduras	Install 2.0 MW Ground-mount Photovoltaic (PV) Solar Panels	\$12,600	3.2	6.0	Energy Conservation	This project reduces costs (currently at \$0.44/kWh) and contributes to energy resilience by providing additional solar capacity into the installation microgrid, therefore reducing reliance on contractor-operated power plant with diesel generators.	\$30
86464	Fort Indiantown Gap	PA	Install Water Distribution Lines, Potable	\$2,700	1.4	11.8	Energy Conservation	This project creates a closed-loop water pipe system. Project will reduce dead-end pipes and fix leaks in current system, saving 52 million gallons of water, \$162,000 in water use fees, and \$65,000 in water line repair costs, annually.	\$11
87291	Fort Leonard Wood	MO	Install Combined Heat and Power System	\$5,300	2.5	6.4	Energy Conservation	This project enhances energy resilience by providing on-site primary power generation into the post's electrical grid and increases the availability of emergency electrical power. It significantly reduces energy demand and consumption.	\$50
87391	88th RSC-Arden	MN	Install Multiple ECMs	\$2,000	2.1	8.8	Energy Conservation	This project significantly reduces energy consumption through the replacement of inefficient and outdated mechanical systems including lighting, boiler, HVAC and motor upgrades. It also reduces substantial costs for operating and maintaining the old and failing systems.	\$8
89118	MTC Marseilles	IL	Install Wind Turbine	\$3,000	1.6	11.8	Energy Conservation	This project will produce renewable onsite energy, as well as reduce on site demand and energy consumption, through modernization of building mechanical and lighting systems. It will also reduce energy intensity annually, leading to a 25% overall reduction by the end of FY 2025.	\$11
89135	Fort Bragg	NC	Install Phase III GSHP Historic District Phase 3a	\$3,000	1.7	8.9	Energy Conservation	This project upgrades old inefficient air handling units and ties into existing GSHP water system (previous project phase). The project will also upgrade Direct Digital Controls (DDC) and tie into existing control system.	\$10
86676	Camp Ripley	MN	Install SMBH Biomass Heating Plant	\$2,500	2.1	10.1	Energy Resilience	This project provides reliable heating for the Minnesota Army National Guard's Maneuver Area Training Equipment Sites. The project replaces 90% of natural gas usage in seven facilities. A 2014 natural gas pipeline explosion in Minnesota cut off natural gas supplies to the installation for seven days, underscoring the need for diversifying heating sources for Camp Ripley's critical facilities.	\$15
91160	Salina Training Center	KS	PV / Water Conservation & Energy Resilience	\$3,693	1.2	16.1	Energy Resilience	This project will install a 400kW PV array and 500kW diesel generator to improve electrical resilience at Salina Training Center. Currently the only back-up generation is housed at the AASF and does not meet the minimum mission requirements. The project will also include water conservation measures including replacement of plumbing fixtures throughout the site. This project supports JFHQ COOP site, AASF and 108th Aviation Units, Regional Training Institute/Premobilization Site, and Salina Training Site D-MarkServer facility.	\$12
92937	Camp Mabry	TX	Install Microgrid	\$5,300	2.9	6.1	Energy Resilience	This project will install a 500 kW natural gas generator, 500 kW fixed axis ground-mounted PV array and a 150 kW/300 kWh battery energy storage system, and upgrade the control system of existing 1200 kW and 300 kW diesel generators. The project will provide continuous power to support the Defense Support to Civil Authorities (DSCA) and Civil Support or Contingency Operations missions for 14-day islanded duration requirement at Camp Mabry.	\$25
88871	Fort Leavenworth	KS	Install 3K Ton Hr Thermal Storage System	\$1,400	1.3	14.7	Energy Resilience	This project will install a 3,000 ton-hour thermal energy storage system (TES) to enable chilled water pumps to continue during chiller outages or power outages. The TES will reduce installation peak demand by nearly 0.5 MW through a 3-4 hour window and provide redundant cooling. The project will support the continued function of the maximum security US Disciplinary Barracks facility and ability to maintain order, discipline, and a safe, humane environment in the event of extreme heat events.	\$2
91164	Fort Bragg	NC	Upgrade Chiller Plant	\$1,150	1.3	13.3	Energy Conservation	This project will upgrade a building level chiller plant exclusively serving a 687K SQFT critical facility housing, the Forces Command (FORSCOM), US Army Reserve Command (USARC), and the Installation Process Node (IPN). The project upgrades will install chiller plant efficiency software and reconfigure the existing systems by integrating the rooftop chillers, the cooling tower, and heat exchanger, to maximize free cooling. The project will improve the garrison's ability to sustain operations in the facility and support power prioritization for a minimum of 14 days.	\$2
<b>Army Program Totals</b>			<b>12 Projects</b>	<b>\$49,538</b>	<b>2.2</b>				
<b>USAF</b>									
GHLN112100	F.E. Warren AFB	WY	Install GSHP at Missile Alert Facilities (MAFs)	\$4,500	1.9	18.1	Energy Resilience	ICBM Facilities Branch headquarters intends to have all the Missile Alert Facilities (MAFs) locations supported with ground source heat pumps (GSHPs) in order to increase energy resilience through by reducing maintenance, lowering energy consumption, and addressing potential vulnerabilities. Currently, Minot AFB has the only locations where GSHPs are installed, thus lessons learned at Minot can be leveraged at other MAFs. The project contributes to energy resilience by removing inefficient obsolete equipment and installing GSHPs, upgrading control systems to DDC, and other various energy conservation measures. The change in equipment reduces the energy demand of the site. This project also removes exterior mechanical components that are affected by harsh winter environment. The mechanical systems of the GSHP will be relocated indoors thereby extending life and easing maintenance. Additionally, having all mechanical equipment indoors improves the mission security at these high security facilities.	\$1

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GLEN181301	Schriever AFB	CO	Upgrade to Co-Gen Microgrid	\$15,260	2.4	5.9	Energy Resilience	The co-generation plant project both increases energy resilience and decreases energy costs. The cogeneration project contributes to energy resilience by replacing two old and unreliable generators with one on-base CCHP system. This improves the reliability of backup electrical generation to mission critical buildings by using the excess heat from the heating / cooling system to generate electrical power. The CCHP system will be the primary source of power on-base and will reduce the risk of the transmission line interdiction and save energy by reusing waste heat for electrical power generation and losses from transmission.	\$30
NZAS166003	Malmstrom AFB	MO	Install GSHP at Missile Alert Facilities (MAFs)	\$6,086	1.5	20.6	Energy Resilience	The project replaces old fuel oil boilers and chillers with new GSHPs and supplemental electric plenum heaters at 15 MAFs. This contributes to energy security by removing exterior mechanical components and relocating all equipment indoors and underground reduces thereby removing potential vulnerabilities in the energy supply. Additionally, the project will replace older mechanical systems with a more efficient configuration that will decrease energy consumption and costs, improve operational reliability, and provide for a longer life-cycle in a location with harsh winter environments. Finally, the project will reduce the reliance on combustion of fuel oil, both increasing resilience and decreasing the GHG footprint.	\$1
SMYU 16-3002A	Osan AB	Korea	ERCIP: Base wide Natural Gas Conversion	\$13,700	2.3	7.2	Energy Conservation	This project converts 90% of the base's heating infrastructure from fuel oil to natural gas (NG) by installing new NG boilers, dual-fired boilers, and NG water heaters. MBTU consumption will annually decrease by 80%, dramatically reducing both energy costs and GHG footprint. Also, the use of dual-fired boilers increases reliability and resilience by shifting the primary fuel source from liquid fuel oil transported by vehicle to a secure subterranean natural gas pipelines. Since Osan is an overseas base in a high threat environment, controlling as much of our energy security behind our own fence line is critical.	\$55
WEAS 15-9001	Louisville Intl AF	KY	Phase II Upgrade (HVAC)	\$1,500	1.4	8.4	Energy Conservation	This project upgrades existing HVAC with new EMCS controls, replaces old furnaces, boilers, and HW heaters with high-efficiency units, and updates exterior lighting. Using less energy and cheaper forms of energy substantially reduces the energy bills. It simultaneously recapitalizes the mechanical systems, effectively putting them at the beginning of a new life cycle, improving reliability and reducing O&M costs and manpower requirement.	\$1
VNVP 18-6101	Sheppard AFB	TX	ERCIP - District Chilled Water, Ice Storage, and Central Plant Upgrade	\$6,547	1.7	11.1	Energy Conservation	This project positively impacts energy resilience by increasing ice storage capacity, expanding the chiller loop, and connecting cooling towers to the municipal effluent water line. The project reduces base demand for potable water and energy, and reduces peak demand to ensure available, reliable and quality power to continuously sustain critical base missions.	\$109
<b>USAF Program Totals</b>			<b>6 Projects</b>	<b>\$47,593</b>	<b>2.1</b>				
<b>USMC</b>									
P1487	Lejeune / New River	NC	Construct Solar Sunshades With Energy Storage, MCB Camp Lejeune	\$9,750	1.2	12.9	Energy Resilience	This project will provide uninterrupted power to mission critical maintenance services that are required to ensure combat readiness and warfighter capability by installing PV panels on the roofs of four Mobile Van Pads (MVPs) at MCAS New River and on the Combat Vehicle Parking (CVP) pad at MCB Camp Lejeune. Four battery banks will provide power to the pad lights with the waste heat of the batteries being used to preheat the air going to each of the four required dehumidifiers to ensure combat readiness and warfighter capability.	\$488
P-93B	MCBH Kaneohe Bay	HI	District CHW and DHW Plant for Bldgs. 7046, 7047, 7057-7059	\$6,185	1.7	12.6	Energy Conservation	This project replaces deteriorating and failing equipment and installs looped Chilled Water and Domestic Hot Water plant to serve five Bachelor Enlisted Quarters (BEQs).	\$334
<b>USMC Program Totals</b>			<b>2 Project</b>	<b>\$15,935</b>	<b>1.4</b>				
<b>USN</b>									
P028	CFA Yokosuka / Japan	Japan	ERCIP - CFA Yokosuka Smart Grid	\$8,530	2.1	9.2	Energy Conservation	The Smart Grid Project at Naval Base Yokosuka provides enhanced ability to assess critical maintenance vulnerabilities and respond to outages, and enhances proactive facilities support, mission effectiveness, and resilience. The project leverages energy consumption reductions to enable monitoring and analysis of high energy consumers and utilities systems across Navy Region Japan. In addition, the data will inform energy planning needed to reduce consumption, lower costs, improve energy resilience and contribute to mission assurance.	\$38
P232	NSA South Potomac - Indian Head	MD	Potable Water System (Central)	\$10,790	2.0	4.6	Energy Conservation	This project contributes directly to Naval Surface Warfare Center industrial processes supporting warfighter readiness. The availability of high quality and a consistent supply of water is crucial to the munitions mission. The project also provides resilience through redundancy in pipe infrastructure at critical points and back up generation for pumping stations.	\$4
P717	JBPHH / Hawaii	HI	ERCIP - Salt Water Pumping Systems	\$1,430	1.4	12.2	Energy Conservation	The project enhances mission effectiveness at the Pearl Harbor Naval Shipyard by providing more efficient and higher capacity salt water pumps for industrial processes and fire fighting requirements. This system is a key capability required to conduct major maintenance and overhauls of aircraft carriers and surface ships in public shipyards. The project reduces operations and maintenance costs.	\$4
P1108	NSA Naples	Italy	C4I Chiller Replacement	\$2,700	2.4	6.6	Energy Conservation	The project leverages integration of several technologies to gain efficiency in the chiller systems supporting critical data center cooling requirements. The project enhances mission effectiveness and availability at the Sixth Fleet Headquarters C4I facility which in turn increases its energy resilience.	\$8
P-186	NAVSTA Everett	WA	Energy - Bldg Recommissioning & Modernization	\$1,970	1.8	3.6	Energy Conservation	The project provides extensive retro commissioning at the installation to optimize performance and also installs upgraded controls. The project will enable greater availability, reduce load requirements, and enable greater mission support to surface Fleet maintenance (FRC) and Port Operations. In addition, the data collected will inform energy planning needed to reduce consumption, lower costs, improve energy resilience and contribute to mission assurance.	\$3

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P-710	NSA Andersen	Guam	885 kW Solar BIPV for 6 Bldgs.	\$5,880	1.5	11.4	Energy Conservation	Installation of the 885 kW solar array will provide large scale power, reducing electrical grid power dependency while reducing operational and commodity costs. This solar array will feed six facilities, including unaccompanied housing and AF Wing HQ, directly with secondary electric power feeding the electrical grid. The project provides monitoring and micro grid controls to maintain energy security and mitigate the impact of outages that result from stability risks in the Guam Power Authority (GPA) system.	\$17
P-879	NAVBASE Guam	Guam	Energy Efficient Lights/HVAC/DHW	\$2,160	5.8	3.8	Energy Conservation	The project will enable greater availability, reduce load requirements, and provide greater mission support to the installation. The project enables critical support in a remote location by improving housing and NEX operations for Air Force and Navy personnel stationed on the island. The project leverages energy savings to support replacement of hot water systems with renewable sources. The project enables Naval Base Guam to enhance energy reliability by replacing R-22 HVAC systems with more efficient HVAC systems and installed DDC controls. The project also provides energy resilience by constructing infrastructure that ties impacted facilities into the smart grid system enabling energy analytics, consumption reduction, and faster outage response. These improvements allow the installation to better mitigate instability risks from the GPA system.	\$24
P-889	NAVBASE Guam	Guam	R22 HVAC & LED Lighting	\$6,920	2.9	9.2	Energy Conservation	Generator and battery upgrades will provide complete power continuity and mitigate cyber threats to combat system testing, tactical equipment and participation in Fleet exercises. NAVSEA Surface Combat Systems Center (SCSC) Wallops Island supports the Aegis and Ships Self Defense Fleets. 100% of the site's current critical load will be met with this project. The new Advanced Missile Defense Radar testing and support capability includes right-sizing of the generation and battery UPS components.	\$23
P1049	SCSC Wallops Island	VA	Power Upgrade and Standby Generation	\$11,307	3.3	6.4	Energy Resilience	Generator and battery upgrades will provide complete power continuity and mitigate cyber threats to combat system testing, tactical equipment and participation in Fleet exercises. NAVSEA Surface Combat Systems Center (SCSC) Wallops Island supports the Aegis and Ships Self Defense Fleets. 100% of the site's current critical load will be met with this project. The new Advanced Missile Defense Radar testing and support capability includes right-sizing of the generation and battery UPS components.	\$34
<b>USN Program Totals</b>			<b>9 Projects</b>	<b>\$51,687</b>	<b>2.5</b>				
<b><u>NRO</u></b>									
4680117662	ADF-SW/Las Cruces NM		Ground Source Heat Pump for Health Services Bldg.	\$247	1.1	16.2	Energy Conservation	Project will reduce energy consumption and costs. The ADF-SW gym is an aging facility and the existing heating, ventilation, and air-conditioning (HVAC) systems are inefficient. The ADF-SW has deferred needed repairs to the facility which now requires full system upgrades. Existing inefficient systems increase utility costs. This project will rectify these issues and result in an energy-efficient facility that will promote productivity and readiness while saving energy dollars.	\$0
<b>NRO Program Totals</b>			<b>1 Project</b>	<b>\$247</b>	<b>1.1</b>				
<b>ERCIP Program Totals</b>			<b>30 Projects</b>	<b>\$165,000</b>	<b>2.2</b>				
*SIR is Savings to Investment Ratio (\$ est. discounted lifetime savings / \$ invested)									
**M&V is measurement and verification									
			<b>Energy Conservation</b>	<b>\$98,309</b>	<b>2.3</b>				10.00
			<b>Energy Resilience</b>	<b>\$66,691</b>	<b>2.1</b>				