

FY 2019 Energy Resilience and Conservation Investment Program, Congressional Notification

FY 2019 ERCIP Project List

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

Project Number	Installation / Location	State	Project Description	Project Cost (\$000)	SIR*	Payback	Project Type	Project Justification	M&V** Cost (\$000)
<b>Army</b>									
92569	Fort Sill	OK	Install Substation Interconnection	\$8,700	0.43	47.10	Energy Resilience	This project will complete full power redundancy for the critical loads of the 434th Field Artillery Brigade (FA BDE), 428th FA BDE, 75th FA BDE, 31st Air Defense Artillery (ADA) BDE, and the 30th ADA BDE by interconnecting the two substations that serve Fort Sill. The project will assure that critical missions maintain power for Army's 14-day requirement and reduce system vulnerabilities to power outages.	\$38
82012	USAG Italy/Caserma Del Din	Italy	Upgrade Del Din Central Energy Plant with Battery and Thermal Storage	\$4,450	2.88	6.39	Energy Resilience	PV, battery, and dual-fuel co-generators will provide 100% of electricity and heat for USARAF C3I and 173rd Airborne Contingency Response Force. This project provides battery storage as uninterruptable power supply (UPS) for the installation and enables the PV to operate with co-generators during loss of grid power. Thermal storage tanks store heat output of co-generators to increase their efficiency and match electric/thermal loads with co-gen production. These improvements will reduce the demand from the commercial power grid and allow the base to handle rapid transitions in the power load during brief outages or reduction in PV output.	\$50
88730	Camp Williams	UT	Install Microgrid, 800 kW Generator, and 1.7 MW Wind Turbine	\$6,800	1.81	10.07	Energy Resilience	This project will assure the missions of Building 6150, several armories, administrative buildings, and barracks for the Army-required 14-days by constructing a micro-grid to integrate all existing forms of energy generation as well as new wind and diesel generation, which will also be constructed in this project. The micro-grid will aid in preventing power outages and other power issues that plague the current system.	\$25
89168	USAG Italy/Camp Ederle	Italy	Convert Steam Lines to Hot Water	\$3,600	2.12	9.54	Energy Conservation	This project is a critical to upgrade this utility to mitigate significant thermal energy losses, which impede the Garrison from providing safe, reliable, and efficient hot water for heating, humidification, medical, and other support requirements. The project will specifically support USAG Vicenza Health Center, the Central Processing facility, the 509th Signal Battalion/Company HQ facilities, and 1500 barracks rooms.	\$25
87125	USAG Benelux/Chievres	Belgium	Convert Heating and Lighting Systems	\$4,050	1.67	9.79	Energy Conservation	Heating on Chievres Air Base is produced at a building level by fuel oil fired boilers. The majority of the fuel tanks are manually gauged and refilled, and require multiple fuel deliveries. The conversion from fuel to natural gas will improve the efficiency and the reliability of the systems to support NATO airfield operations, the SACEUR mission, and Air Force operational facilities.	\$10
92009	Ceiba Armed Forces Reserve Center / Puerto Rico	Puerto Rico	Install 650 kW PV Solar Array	\$3,600	1.35	14.08	Energy Conservation	This project reduces reliance on an unreliable grid and reduces the demand for diesel fuel to power the installation. The catastrophic impacts of Hurricane Irma in 2017 are evidence of the vulnerabilities of any type of fossil fuel supply for power reliability. Also, the project will complement a project to install diesel generation and upgrade the onsite distribution system to ensure a more consistent power supply via a microgrid. The project ultimately ensures the training and mobilization mission of the Army Reserves to support global contingencies is sustained.	\$25
89184	Caserma Ederle	Italy	Replace Co-Gen Plants & Add Thermal Storage	\$4,350	5.91	2.52	Energy Resilience	This project increases infrastructure security and reliability by adding on-post generation capacity while increasing energy efficiency and will be fully metered and monitored to meet all reporting requirements. The improvements to the central energy plant will allow the co-generators to operate at peak efficiency and capacity with the thermal storage, which will also improve the capacity to operate through short grid interruptions or completely independent of the grid.	\$35
91253	Fort Jackson	SC	Upgrade Central Energy Plants	\$4,980	1.97	8.01	Energy Conservation	The project will increase the resiliency of existing energy plants by incorporating new equipment that will improve reliability of heating, cooling, dehumidification, and hot water for mission facilities.	\$25
<b>Army Program Totals</b>			<b>8 Projects</b>	<b>\$40,530</b>	<b>2.06</b>	<b>16.83</b>			<b>\$233</b>
<b>USAF</b>									
GLEN191301	Schriever	CO	UPGRADE TO MICROGRID Part 2, BUILDING 600	\$15,002	2.34	10.89	Energy Resilience	This project will provide redundancy to the 50th Space Wing, National Space Defense Center, JFCC, the Space Innovation and Development Center, the Missile Defense Agency's Joint National Integration Center, 310th Space Group and numerous other tenant organizations by installing a second co-generator to back up the existing co-generator. The project will reduce the downtime due to a failed generator by providing back-up generation during planned or un-planned maintenance.	\$50
UHHZ120964	Robins AFB	GA	Upgrade existing PAMPER plant system	\$4,450	15.35	1.06	Energy Resilience	Robins AFB currently has a low-cost interruptible natural gas (NG) service contract rate meaning that the NG provider can curtail the supply at any time. This project will provide uninterrupted natural gas supply during utility interruptions and allows the base to continue serving critical natural gas loads for up to 5 days, all while maintaining a flexible natural gas supply schedule. The critical natural gas loads served by this project are the Warner Robins Air Logistics Complex, Air Force Life Cycle Management Center, 116th and 461st Air Control Wing, and 78th Air Base Wing.	\$50
CURZ149601	Burlington ANGB	VT	Install Solar Panels	\$2,000	1.30	15.38	Energy Resilience	This project will assure the operational training missions of fighter aircraft (F-16's and future F-35's) including Squadron Operations and Simulators as well as all maintenance facilities for the 4th and future 5th generation aircraft by expanding the current solar PV system and installing on-site battery storage and distribution systems. The system will provide peak load shaving opportunities during times when the base substation is near or at capacity allow the base to maintain reliable power to all critical missions.	\$50
DJCF179390	Channel Islands	CA	ERCIP CONSTRUCT ENERGY RESILIENCE SYSTEM	\$3,500	1.03	15.69	Energy Resilience	This project mitigates power interruptions to the Modular Fire Fighting System Mission. Specifically, the project will ensure the aerial firefighting mission command and control center has assured access to power in the case of a power disruption. The project results in an energy resilient power generation source.	\$50
BAEY1056834	Beale AFB	CA	Construct 2 MW Solar PV Array	\$4,957	0.70	23.54	Energy Resilience	This project enhances Beale AFB's ability to support the Global Hawk mission, which requires 24/7/365 access to power. The project provides the mission a resilient backup generation to provide seamless power in the event of an outage. The project is necessary to prevent power failure to the Global Hawk Mission which could result in an unquantifiable impact to the AF mission.	\$50

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WWCX173002	Thule	Greenland	INSTALL ENERGY MANAGEMENT CONTROL SYSTEM,	\$6,000	2.49	5.66	Energy Conservation	This project will enable automated control of building temperatures, wet utilities temperatures, ventilation and lighting based on building occupancy, outdoor air temperatures, wind conditions and use of the area. This is critical to mitigate excessive repair costs incurred due to building systems freezing during unoccupied periods caused by a heating system failure. In addition, heating, lighting and ventilation systems are sometimes left at occupied demand levels when spaces are unoccupied resulting in inefficient energy use, in Thule's case costing fuel oil supply levels that may not have been necessary. This system will allow the base to save an estimated 45,187 MMBTU per year or in other terms approximately 325,815 gallons of JP8 fuel.	\$50
BAEY1065698	Beale AFB	CA	Microgrid Resiliency	\$3,896	0.28	37.24	Energy Resilience	Global Hawk mission is 24/7/365. They are not able to perform the mission without electric power, therefore 0% tolerance. The equipment is sensitive to brief outages in power and power quality. This project will remediate that since the BESS will be able to provide high power quality more immediately than the currently backup diesel generation. There were 87 outages for a total of 260 total hours (3-hour average outage) during 2010-2016. The mission requires additional resilience to provide diverse non-diesel generation, and ultimately maintain uninterrupted operation. This project will extend the time the power will stay on during an outage to a 10-day minimum.	\$50
<b>USAF Program Totals</b>			<b>7 Projects</b>	<b>\$39,805</b>	<b>3.24</b>	<b>13.80</b>			<b>\$350</b>
<b>USMC</b>									
P-975	MCLB Albany	GA	Replace Hardness Treatment in Water	\$10,015	1.25	12.00	Energy Conservation	Project is required to remove excess calcium and zinc from MCLB Albany water system in order to prevent scale buildup and ensure resiliency in the potable water system at the base at USMC's logistics hub for the East Coast. In addition, the project mitigates scaling which has adversely impacted the MCLB Albany Industrial Wastewater Treatment Plant that has resulted in a shutdown of the plant affecting multiple missions throughout the base.	\$300
P-480	MWTC Bridgeport	CA	MWTC Microgrid Phase 1 & 2	\$4,729	1.50	9.91	Energy Resilience	This project will mitigate frequent, prolonged power outages and power quality issues present at the installation. The current controls systems of the on-site 1 MW generator are insufficient to provide seamless transition in case of interruption or prolonged sustainment in case of outage. This project will upgrade the base's distributed energy system to seamlessly manage power from a variety of different yet complementary grid and on-site energy sources to improve power quality, implement cybersecurity solutions and lower energy costs. These improvements will enhance energy resilience and increase mission readiness of the installation.	\$142
P-505	MCAS Beaufort	SC	Electrical Hardening and Black Start CHP System	\$22,765	1.36	13.21	Energy Resilience	This project will enhance energy reliability and resilience at MCAS Beaufort by relocating power lines underground to harden the electrical distribution grid, making the Station less susceptible to outages from hurricanes, other natural disasters, manmade/terrorist events, and other unanticipated events. Additionally, by installing a 4.4 MW combined heat and power (CHP) generator this project will allow MCAS Beaufort to black start the installation in the event of loss of commercial power, add capability to "island" and continue meeting critical and operational mission needs in the event a sustained loss of commercial power and/or be used to independently backup approximately 4 MW of mission critical facilities that do not currently have backup generation.	\$683
<b>USMC Program Totals</b>			<b>3 Projects</b>	<b>\$37,509</b>	<b>1.35</b>	<b>12.47</b>			<b>\$1,125</b>
<b>USN</b>									
P234	NSA South Potomac	MD	IH Water Project -North Production	\$15,188	2.46	7.58	Energy Resilience	This project will provide reliable domestic water service to support industrial processes such as the production scale energetics manufacturing and Crater Seaport. New standby generators will be installed at existing well pumps to provide back-up power and minimize system outages.	\$9
P993	NSA Bahrain	Bahrain	Construct Electrical Distribution System at LSA/FL Isa	\$27,330	2.05	7.51	Energy Resilience	This project is critical in supporting maritime patrol reconnaissance and other vital operations in the NAVCENT area of responsibility. Currently, Isa Air Base receives its power solely from diesel generators. This will project will provide the distribution system and associated equipment, and interconnection to the existing utility grid to provide a reliable, sustainable means in supporting prime power for operations, improve energy resilience, and reduce risk to meeting mission requirements. The existing diesel generators will remain in place to provide back-up generation during grid disruptions. This project will enhance energy resilience and increase mission readiness of the installation.	\$9
P1003	NAVBASE Coronado / San Clemente Island Site	CA	SCI Wind Turbines	\$21,010	1.01	17.65	Energy Resilience	This project will serve fleet training, weapon and electronics systems testing, and research, development, acquisition, testing, and evaluation (RDTA&E). The installation of a flywheel will directly remediate electrical power disruption risks by stabilizing the grid network and regulating the supply and demand fluctuations. The wind turbines will feed into the flywheel which will also be connected in parallel with existing diesel generators to allow the diesel generation to be shutdown when wind output exceeds electrical demand.	\$375
P-828	Great Lakes Naval Station	IL	Install Smartgrid at NS Great Lakes	\$8,940	1.16	13.37	Energy Conservation	The Project provides direct support to facilities supporting Recruit Training Command and Training Support Center Great Lakes. These commands are the Navy's primary source for the initial workforce and military training of enlisted sailors. This project will enhance region and enterprise mission readiness by providing cyber secure utility and energy networking, system analysis, and faster recovery from cyber and other disruptions. The project will reduce cyber risk of exploitation and mitigate required shut downs due to cyber attack.	\$17
P1032	NAS Oceana	VA	Install 12 Maintenance Power Converters at Hangars 404 / 500	\$2,670	1.67	9.33	Energy Resilience	This project will procure and install 12 additional 90 kVA, 400 Cycle electrical power converters on the aircraft parking apron adjacent to hangars 404 and 500 to support power requirements of Super Hornet aircraft home-based at Oceana. Project will support the requirement to provide adequate 400 Cycle Ground Maintenance Power to F/A-18 E&F aircraft housed in Hangars 404 and 500	\$12
<b>USN Program Totals</b>			<b>5 Projects</b>	<b>\$75,138</b>	<b>1.72</b>	<b>11.12</b>			<b>\$422</b>

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<u>DHA</u> P-1702	Navy Expeditionary Medical Support Command (NEMSCOM), Williamsburg, VA - Cheatham Annex	VA	Lighting Improvement at Cheatham Annex, Warehouse, Building CAD 565	\$408	2.10	5.90	Energy Conservation	The project installs critical lighting replacement of the current failing system to support the Defense Health Agencies' Navy Expeditionary Medical Logistics program mission which provides comprehensive, shore based medical support to Navy and Marine Corps forces engaged in combat operations.	\$1
<b>DHA Program Totals</b>			<b>1 Project</b>	<b>\$408</b>	<b>2.10</b>	<b>5.90</b>			<b>\$1</b>
<b>ERCIP Program Totals</b>			<b>24 Projects</b>	<b>\$193,390</b>	<b>2.04</b>	<b>13.12</b>			<b>\$2,131</b>
				<b>Energy Conservation</b>	<b>\$41,593</b>	<b>1.63</b>	<b>10.59</b>		
				<b>Energy Resilience</b>	<b>\$151,797</b>	<b>2.15</b>	<b>13.81</b>		

\*SIR is Savings to Investment Ratio (\$ est. discounted lifetime savings / \$ invested)

\*\*M&V is measurement and verification