FY2017 Energy Resilience and Conservation Investment Program, Congressional Notification

FY2017 ERCIP Project List

Project No.	Location	State	Project Description	Project Cost ($000)	SIR*	Payback	Project Type	Justification	M&V** Cost ($000)
Army									
81130	Dugway Proving Ground	UT	Install a Microgrid Control System	$7,500	3.5	4.2	Energy Conservation	Project optimizes energy use, decreases energy demand and allows uninterrupted mission critical chemical and biological testing and other critical facility operations. Dugway Proving Ground (DPG) chemical and biological testing operations require two primary sources of power; only one source exists today. Project will install a microgrid control system (MCS) with battery storage which will connect an existing solar array to the DPG grid, which in conjunction with existing connected back-up generators, and the existing utility power will provide the two sources of power needed to continue mission critical testing and support other critical facilities; other critical facilities supported include the unmanned aerial vehicle program, fire, police, and communications facilities.	$17
81604	Tooele Army Depot	UT	Install Gas Lines and Fuel Swapping	$8,200	2.1	9.4	Energy Conservation	Project will greatly reduce the installation's energy consumption, demand and costs through replacing outdated fuel oil and propane-fired furnaces and improving building envelopes. The installation of approximately 30,000 LF of new gas lines will provide a more reliable, less costly means for supplying thermal energy to installation mission and support facilities.	$30
80872	Fort Hood	TX	UMCS Integration	$1,300	3.6	3.4	Energy Conservation	Project will reduce energy consumption and costs. Fort Hood does not have an existing capability to monitor energy consumption of a large proportion of the base's facilities. Expanding the base's utility monitoring control system (UMCS) enables the base to identify high energy consumers and the cause of the high usage. The information gathered will inform energy planning and investments needed to reduce consumption, lower costs, improve energy resilience, and contribute to mission assurance.	$7
81834	American Samoa	American Samoa	Install 325KW PV System	$2,100	1.5	12.6	Energy Conservation	Project will reduce energy consumption and reduce costs; American Samoa is one of the highest electricity cost locations for the Army Reserve. The Army Reserve Center is susceptible to disruption of power in the event of disasters due to dependence on imported fuel shipped to the island twice per week. The addition of solar power with battery storage will provide access to available, reliable, and quality power to continuously sustain critical missions. In addition, the Army Reserve Center is the only armed forces presence on the island, as such the local community and FEMA rely heavily on the facility during natural disasters and other emergency response events.	$8
80960	Fort Hunter Liggett	CA	Construct Secondary Wastewater Treatment Facility	$5,400	1.5	13.2	Energy Conservation	Water conservation project that contributes to energy resilience by reducing the amount of evaporated non-potable water at the sewage treatment plant. The water savings from this project will be used to support training activities and fight drought conditions in the summer when water demand and use is highest.	$6
87299	Tobyhanna Army Depot	PA	Retro Commission Facilities	$850	2.4	4.1	Energy Conservation	Project will reduce energy demand, reduce utility costs, with an additional benefit of improved working conditions. Retrocommissioning of buildings in the industrial complex and warehouse mission spaces is an energy audit finding requirement. Recommissioning of buildings will improve the efficiency of the buildings' energy systems to reduce energy consumption, reduce energy costs and to improve working conditions. Retrocommissioning activities will focus on uncontrolled building exhausts, improper temperature setpoints and setbacks, simultaneous heating and cooling, outdoor air, lack of integration of controls and/or monitoring with the building management system, thermostat placement for unity heaters, and general configuration of HVAC systems.	$10
80600	Fort Drum	NY	Retrocommission Phase II	$1,750	2.6	6.7	Energy Conservation	Project will reduce energy consumption and reduce costs. Many of Fort Drum's existing heating, ventilation, and air-conditioning (HVAC) systems are under duress and inefficient; needed repairs are continuously deferred. Inefficient systems increase utility costs, while also compromising building occupants' mission readiness. This project will rectify these issues and result in energy-efficient facilities that will promote productivity and readiness while saving energy dollars.	$13

FY2017 Energy Resilience and Conservation Investment Program, Congressional Notification

FY2017 ERCIP Project List

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81968	Detroit Arsenal	MI	Recirculating Air in Test Cells	$2,050	2.2	8.1	Energy Conservation	Project will reduce energy demand and reduce costs. The facility's eight test cells are heated for testing various configurations of vehicle engines. The heated air is currently being exhausted, requiring additional time and energy to heat cold air to conduct tests. This project will allow the heated air to be reused for the duration of the tests. Recirculation will improve the efficiency of the testing schedule as well as the energy efficiency of the facility.	$13
87253	Fort Drum	NY	Post Wide LED Lighting	$2,750	2.3	6.5	Energy Conservation	Project will reduce energy demand and reduce costs. Fort Drum's existing high pressure sodium (HPS) exterior lighting is inefficient and failing and is providing very poor quality lighting. The project will provide LED fixtures, with motion control, will enhance the security of the installation and will result in greatly reduced energy and maintenance costs.	$15
85921	Fort Lee	VA	Modernize High Bay & Exterior Lighting	$1,250	1.4	9	Energy Conservation	Project will reduce energy demand and reduce costs. The existing ordnance high bay training spaces' metal halide fixtures experience high rates of failure, provide inadequate light levels, and are not compatible with available replacement parts. This project will improve light levels for training, reduce energy consumption, and lower costs.	$5
85759	Fort Polk	LA	Upgrade to Energy-Efficient Chillers, High-Bay Lighting	$1,900	1.3	14.4	Energy Conservation	Project will reduce energy demand and reduce costs. Project is required to replace inefficient and failing HVAC equipment and improve working conditions in the Battalion Headquarters readiness functions. In addition to support the tactical fleet and mobility, the project provides improved energy efficient lighting at two General Purpose Vehicle Maintenance facilities and the 5th Aviation Maintenance Hangar.	$3
85776	Fort Benning	GA	Retrofit Chillers Upgrade	$2,200	1.3	12.8	Energy Conservation	Project will reduce energy demand and reduce costs. Currently, Fort Benning uses older, inefficient and oversized chillers to generate chilled water at various facilities. This project will install more efficient, appropriately-sized chillers, significantly decreasing the energy consumption for cooling. These chillers support critical training and FORSCOM missions.	$3
82215	Fort Carson	CO	Install High-Efficiency Boilers, Various Facilities	$5,000	1.3	14.5	Energy Conservation	Project will reduce energy demand and reduce costs. Fort Carson's existing boilers are inefficient and at the end of their useful life. This project will install more reliable and efficient boilers which will ensure mission essential facilities remain operational with reliable heating systems, while also reducing energy consumption and lowering utility costs.	$10
Army Program Totals			**13 Projects**	**$42,250**	2.1	7.6			
DLA									
EU 17UE01	Rota	Spain	Construct 1MW Solar Array	$3,710	2.2	8.6	Energy Conservation	Project will reduce energy demand from the grid and reduce costs. DLA experiences high cost electricity rates at Rota, Spain. Project will install a 1MW PV array to meet DLA's Rota, Spain Distribution and Disposition Sites' mission load requirements.	$5
DLA Program Totals			**1 Project**	**$3,710**	2.2	8.6			
NRO									
NRO CAP 17 002	NRO Cape CCAS	FL	EPF LED Lighting Replacement	$104	1.2	2.1	Energy Conservation	Project will reduce energy demand and reduce costs. Currently, NRO's existing light fixtures are inefficient. This project will replace existing fluorescent T5 lamps with LED T5 direct replacement lamps that have a longer lifespan, better energy efficiency and cooler operational temperatures which reduces the clean room air conditioning load.	$2
NRO WF 17 05	Wesfields	VA	High Bay Lighting Upgrade	$146	1.7	8.6	Energy Conservation	Project will reduce energy demand and reduce costs. Currently, NRO's existing headquarters warehouse high bay light fixtures are inefficient. This project will install LED fixtures which will result in an approximately reduced electricity consumption of 16%.	$2
NRO Program Totals			**2 Projects**	**$250**	1.5	3.8			

FY2017 Energy Resilience and Conservation Investment Program, Congressional Notification

FY2017 ERCIP Project List

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NSA									
31273	NSAH Wahiawa Kunia Oahu	HI	Renewable Energy System Installations and Facilities Energy Improvements - Oahu	$14,890	1.3	13	Energy Conservation	The NSAH (Wahiawa and Kunia, Oahu) project will decrease energy consumption and costs, and improve energy security and resilience, at the NSA site in Oahu, HI. It will allow the facilities to sustain operations for much longer periods of time than what is capable today with the existing standby generators and available fuel storage capacity. In addition, the renewable energy and energy resilience technologies being implemented will assist in reducing the site's more than $5 million annual electricity bill in one of the most expensive electricity rate states in the U.S.	$0
NSA Program Totals			**1 Project**	**$14,890**	1.3	13.0			
DHA									
P 1504	Naval Medical Center NMC Portsmouth	VA	ECIP - Facility Energy Improvements	$273	4.0	3.5	Energy Conservation	Project will reduce energy demand and reduce costs. This project will provide various energy conservation measures to achieve energy efficiencies and energy savings which will reduce the electric load and cost of the installation.	$3
P 1505	Naval Medical Center NMC Portsmouth	VA	ECIP - Retro Commissioning Buildings 2 and 3 NMC Portsmouth	$610	5.0	1.8	Energy Conservation	Project will reduce energy demand and reduce costs. Project will conduct a comprehensive retro commissioning of Buildings 2 and 3 including planning, investigation (functional testing, trend analysis, including sample assessments of terminal units), implementation, verification, and turnover. Effort will include tuning, adjusting and balancing of three air handlers, and programming of software to implement energy savings strategies. This project promotes energy efficiency and energy savings.	$16
DHA Program Totals			**2 Projects**	**$883**	4.7	2.1			
USAF									
ANZY120146	Arnold Air Force Base	TN	ECIP-ReplaceVKF C92 Compressor, FAC 651	$480	1.5	14.2	Energy Conservation	Project will reduce energy demand and reduce costs. Project will replace existing inefficient and oversized equipment which has reached the end of its useful life and is the single point of failure for the facility.	$3
MHMV150125	Kirtland Air Force Base	NM	LED Street Lights & Hangar Upgrade	$1,350	2.9	3.5	Energy Conservation	Project will reduce energy demand and reduce costs. Kirtland's existing light fixtures are inefficient. This project will replace existing inefficient T5 hangar lights and metal halide lights to efficient LED lighting in three aircraft hangars and installation streets. The project will dramatically improve safety and maintenance while reducing energy consumption in these high-use facilities.	$1
GLEN162605	Schriever Air Force Base	CO	EMCS Multi facilities	$3,295	2.8	4.5	Energy Conservation	Project will reduce energy demand and reduce costs. Currently, Schriever has three different energy management systems with different capabilities controlling HVAC and power systems in Mission critical facilities. The system operation is inefficient and confusing which degrades the effectiveness of the systems. This project consolidates these systems and adds more facilities to be controlled by the integrated system.	$1
ZNRE 12 1802	Yokota Air Base	Japan	Install EMCS In Multiple Facilities	$1,725	3.2	4.2	Energy Conservation	Project will reduce energy demand and reduce costs. Yokota is instituting a new energy management system to control multiple facilities' (critical facilities to include HQ Group, HQ Wing, Squad Ops, Jet engine maintenance, and others) energy systems. This will result in lowered energy usage, streamlined energy management decisions and quicker maintenance diagnostics.	$3
FXSB 15 1750	JB Elmendorf Richardson	AK	HVAC Energy Upgrade, Three CDC Bldgs	$1,107	2.9	6.2	Energy Conservation	Project will reduce energy demand and reduce costs. Currently, JBER requires three steam boilers to meet an area heat load; two boilers are not operational and the third boiler is failing from overload; expensive emergency boilers are currently providing heat. This project will install a new hot water system with modern controls to provide more reliable, cost effective required heating.	$2
KRSM 15 3006	Hill Air Force Base	UT	Replace Wall Pack Lighting at Multi Bldgs	$1,638	2.5	4.9	Energy Conservation	Project will reduce energy demand and reduce costs. Existing inefficient high pressure sodium type exterior light fixtures at multiple facilities are at the end of their useful lives. The project will provide LED fixtures that will result in greatly reduced energy and maintenance costs.	$1

FY2017 Energy Resilience and Conservation Investment Program, Congressional Notification

FY2017 ERCIP Project List

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FSPM 14 1401	Edwards Air Force Base	CA	Repair Heating, Cooling, & Micro Turbine, General Ridley B1440	$3,900	2.6	4.8	Energy Conservation	Project will reduce energy demand and reduce costs. Edwards AFB current boilers are inefficient to meet the General Ridley Building critical facility requirements of electrical power and continuous heating or cooling. This project replaces the existing boilers and installs a one megawatt micro-turbine with heat recovery hot-water/chilled water co-generation. The project when operational will also reduce power grid load for main base at normal and peak power demands.	$1
ZHTV 12 0035	Wright Patterson Air Force Base	OH	Repair HTHW Line C (Area A) W/Natural Gas Boilers	$14,400	2.5	6.2	Energy Conservation	Project will reduce energy demand and reduce costs. Current, high temp hot water lines are beyond repair, and have failed several times since 2011 which impacted personnel conducting critical missions at HQ AFMC, NASIC and others. This project installs natural gas decentralized boilers to serve HQ AFMC, NASIC, the VOQ's, and 88 ABW facilities and will provide a more efficient, less costly and reliable heating capability to these areas.	$41
ANZY 11 0015	Arnold Air Force Base	TN	Repair Steam Insulation, Mech Rooms	$1,215	2.3	6.3	Energy Conservation	Project will reduce energy demand and reduce costs. The current steam distribution lines are not properly insulated causing heat loss and increased energy use to maintain the heat load at Arnold AFB. Project will insulate steam lines to 35 buildings, improving safety, reducing energy demand and saving costs.	$3
LXEZ 17 1383	Kadena Air Base	Japan	Upgrade Exterior Lighting Basewide	$4,007	2.6	4.6	Energy Conservation	Project will reduce energy demand and reduce costs. Current street, parking, and area light fixtures are inefficient, have high annual maintenance costs and do not effectively provide required lighting. The project will install LED lighting which will dramatically improve safety and maintenance while reducing energy consumption in these high-use areas.	$1
FSPM 11 1403C	Edwards Air Force Base	CA	Repair Retrofit Lights Phase III Multi Bldgs	$4,500	2.2	5.4	Energy Conservation	Project will reduce energy demand and reduce costs. The current fixtures are older magnetic ballast higher wattage type lamps for both office and high bay lighting with no system controls. Project will install high efficient lighting with occupancy controls to significantly improve hangar lighting and cut the energy consumed almost in half.	$1
QKKA 13 1025	Misawa Air Base	Japan	Replace Boilers at Plant Bldg 1337	$5,315	1.9	8.3	Energy Conservation	Project will reduce energy demand and reduce costs. The current boilers are inefficient and are at the end of their useful life. Due to a load capacity mismatch between two plants, approximately 20,000 gallons per day of heated condensate water is dumped into the sanitary sewer system. This project will install new efficient boilers which will fix the mismatched plants and will serve new critical hardened aircraft shelters, flight simulators, 10-bay hangar and other facilities.	$22
USAF Program Totals			**12 Projects**	**$42,932**	2.5	5.5			
USMC									
P 1337	MCAS Beaufort	SC	Barracks Chilled Water Storage System	$1,395	1.3	11.9	Energy Conservation	Project will reduce energy demand and reduce costs. The current chilled water system at MCAS Beaufort creates a significant electrical load during costly peak demand periods. This additional load incurs high electrical rate and demand charges to the installation. The new chilled water storage system will allow the installation to efficiently operate the chillers at night during off-peak demand periods, which will result in a significant reduction in electricity use. This will lower energy costs to the USMC, and improve energy resilience through energy load reduction.	$70
USMC Program Totals			**1 Project**	**$1,395**	1.3	11.9			

FY2017 Energy Resilience and Conservation Investment Program, Congressional Notification

FY2017 ERCIP Project List

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USN									
P006	NAVBASE SAN DIEGO	CA	Smart Grid / Industrial Control Systems	$4,230	2.9	6	Energy Conservation	Project will reduce energy demand and reduce costs. The Smart Grid Project at Naval Base San Diego provides enhanced ability to assess critical maintenance vulnerabilities and respond to outages, and enhances proactive facilities support, mission effectiveness, and resiliency. The project leverages energy consumption reductions to enable monitoring and analysis of high energy consumers and utilities systems across Navy Region Southwest. In addition, the data will inform energy planning needed to reduce consumption, lower costs, improve energy resilience and contribute to mission assurance.	$6
P333	SUBASE Kings Bay NAS Jacksonville	FL	Smart Grid / Industrial Control Systems	$3,230	2.4	6.4	Energy Conservation	Project will reduce energy demand and reduce costs. The Smart Grid Project at Subbase Kings Bay and Naval Air Station Jacksonville provides enhanced ability to assess critical maintenance vulnerabilities and respond to outages, and enhances proactive facilities support, mission effectiveness, and resiliency. The project leverages energy consumption reductions to enable monitoring and analysis of high energy consumers and utilities systems across Navy Region Southwest. In addition, the data will inform energy planning needed to reduce consumption, lower costs, improve energy resilience and contribute to mission assurance.	$14
P102	NSF DIEGO GARCIA	Diego Garcia	3 MW Solar PV Array	$17,010	1.0	19.1	Energy Conservation	Project reduces brown fuel energy demand and reduce costs. The addition of solar PV arrays at Naval Support Facility Diego Garcia provides greater resilience and stability to support energy requirements in an isolated and high cost to provide environment. Additionally, the project reduces power generation requirements, enables greater availability for mission critical assets, and reduces the need for fuel logistics support and associated security requirements for the island.	$34
P679	NAVBASE GUAM	Guam	Solar Assisted HVAC and R-22 HVAC Replacement	$1,240	7.6	2.1	Energy Conservation	Project will reduce energy demand and reduce costs. The project enables Naval Base Guam to reduce energy costs and enhance energy reliability by replacing R-22 HVAC systems with renewable energy powered HVAC systems. 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.	$5
P615	NAVSTA GUANTANAMO BAY	Guantanamo Bay	Electrical Power Plant Controls Upgrade	$6,080	2.4	7	Energy Conservation	Project will reduce energy demand and reduce costs. The project will enhance mission effectiveness and availability of generator support by optimizing the efficiency and load sharing of 12 generators at Naval Station Guantanamo Bay. The increased optimization will maximize existing alternative fuel power sources, decrease costs to generate electricity contributing to greater energy security at the installation, and provide longer and more reliable mission support due to reduced maintenance requirements.	$24
P231	NSA SOUTH POTOMAC	MD	Envelope & Fixtures, Multiple Buildings	$1,410	2.1	8.6	Energy Conservation	Project will provide energy consumption and cost reductions and improve energy security and resilience at NSA South Potomac and enable greater devotion of resources to the installation's primary mission. The project will enable greater availability, reduce load requirements, and provide greater mission support to the installations Chemical Incident Response Force support facilities.	$3
P669	NAVBASE GUAM	Guam	1.6 MW Solar Array, WWTP	$8,540	1.6	10.4	Energy Conservation	Project will reduce energy demand and reduce costs. Installation of the 1.6MW solar array will provide large scale power reducing electrical grid power dependency while reducing operational cost of the waste water treatment plant and power and sewage utility commodity costs . This solar array will feed 27 facilities directly with secondary electric power feeding the electrical grid. The project provides monitoring and micro grid controls to maintain energy security and enhance response to outages.	$17
USN Program Totals			**7 Projects**	**$41,740**	1.9	9.2			

FY2017 Energy Resilience and Conservation Investment Program, Congressional Notification

FY2017 ERCIP Project List

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WHS									
ECIP17 PEN1	Various Locations	VA	Recommissioning	$1,450	1.5	4.1	Energy Conservation	Project will reduce energy demand and reduce costs. This project utilizes building automation systems (BAS) and automated fault detection diagnostics tools in Washington Headquarters Services (WHS) facilities in the National Capital Region, e.g., Pentagon, Mark Center, RRMC, to identify equipment that is operating outside normal operating parameters and implements corrective measures for BAS programming and hardware and mechanical equipment. It will improve mission critical facilities energy resilience by restoring mechanical equipment to original operating parameters thus reducing energy used and mission critical power requirements. If the project is not implemented mission critical power requirements will increase as equipment operates inefficiently.	$15
WHS Program Totals			**1 Project**	**$1,450**	1.5	4.1			
DIA									
DIA 18-01	JB Anacostia-Bolling	DC	Chilled Water Energy Improvements	$500	1.5	8.9	Energy Conservation	Project will reduce energy demand and reduce costs. Currently, DIA chillers are inefficient and costly to maintain. In addition, DIA has experienced a steep incline in utility costs. Project will install, dedicated outdoor air system coils and other measures to significantly reduce the electrical load requirements of DIA HQ to reduce cost and maintain critical cooling to DIA HQ.	$10
DIA Program Totals			**1 Project**	**$500**	1.5	4.1			
ERCIP Program Totals			**41 Projects**	**$150,000**	**2.1**	**7.3**			

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

**M&V is measurement and verification

Energy Conservation	**$ 150,000,000**	**2.1**	**7.3**	