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U.S. Army Energy Resilience, Energy Savings Performance Contracts, and Utility Energy Service Contracts

Army Strategy and Pivot to Resilience

Chairman Upton, Ranking Member Rush, and distinguished members of the committee, thank you for the opportunity to testify about Army energy resilience and our utilization of Energy Savings Performance Contracts (ESPCs) and Utility Energy Service Contracts (UESCs). I want to begin by thanking the committee for its interest in this area and look forward to answering questions about how we use these authorities to support Army readiness, modernization and reform across our installations. Your leadership and guidance in this area are instrumental in continuing the successes we have experienced over the years. I would like to begin by discussing how secure, consistent access to energy and water is essential to sustaining critical Army missions, and how our installations support operational warfighters and enable Army readiness.

The Army's number one priority is Readiness. This aligns with the Secretary of Defense and the Secretary of the Army's efforts to ensure, build, and sustain warfighting capabilities. As outlined in the National Defense Strategy, Army modernization efforts support our priority to attain readiness to meet both current and future threats. Army installations are readiness and power projection platforms where our Soldiers live, train and work. Attaining desired readiness levels requires both a system-wide assessment of current conditions and a modernization effort that seeks to mitigate risk, while setting conditions to meet both current and future threats. The Army's 156 installations must be ready, secure, and capable of deploying and sustaining forces in contested environments, anytime and anywhere the Army may be called upon to fight and win our great Nation's wars.

Our installations rely, with few exceptions, on commercial energy and water sources to accomplish critical missions. The Army is the largest consumer of energy in the Federal Government. In FY18, we spent more than $1.08 billion on energy to support our installations. The Army recognizes that reliable supplies of installation and operational energy, as well as water, will be challenged across multiple domains, by

multiple actors simultaneously. As potential vulnerabilities emerge in the interdependent electric power grids, natural gas pipelines, and water resources, ensuring reliable sources of energy and water for our installations and the missions they support has become increasingly dynamic and challenging. To meet this challenge, the Army is pivoting its energy planning and assessment approaches to increase the focus on resilience, complementing our historical focus on cost avoidance, conservation, and efficiency.

Energy resilience is a critical component to building and enabling Army readiness and support to our Soldiers and joint service partners across the installations portfolio. The Army's definition of "energy resilience" is the ability to avoid, prepare for, minimize, adapt to, and recover from anticipated and unanticipated energy disruptions in order to ensure energy availability and reliability sufficient to provide for mission assurance and readiness, including task critical assets and other mission essential operations related to readiness, and to execute or rapidly reestablish mission essential requirements. Assured access to energy and water underpins readiness-related functions that occur on Army installations and are increasingly vulnerable to severe weather or hostile action, as highlighted by the recent hacker intrusions on our national electrical grid. Recognizing these emerging challenges, the Army is moving aggressively to implement a policy directing installations to be capable of providing necessary energy and water for critical missions for a minimum of 14 days.

As we pivot to energy resilience, we must first assess current installation capabilities and vulnerabilities. We assess energy resilience against four attributes: (1) Critical Mission Sustainment; (2) Assured Access; (3) Infrastructure Condition; and, (4) System Operations. This helps the Army to evaluate and identify gaps in energy and water resilience and prioritize mission-critical projects. We are working to complete installation energy plans over the next three years to provide direction forward. In addition, we will continue to build on past projects and established capabilities to ensure that energy-related investments first and foremost contribute to energy resilience.

Modernizing our energy and water infrastructure is one component of our plan to increase resilience. New and more reliable technology with improved service life and

control systems contribute to energy and water resilience. By investing in energy infrastructure—such as redundant feeders for power, and backup power systems for critical facilities—and modernizing utility systems with current technology control systems, sensors and monitoring equipment, we are enhancing our installations' overall resilience and supporting the Army of tomorrow. Efficiency remains a critical component of the Army's installation strategy as it avoids costs and, by reducing energy demands, makes installation energy resilience easier to achieve.

Energy Savings Performance Contracts and Utility Energy Service Contracts

We are accomplishing energy projects through direct appropriations and taking advantage of third-party financing and private investments to shift the upfront investment costs to the commercial sector and accelerate the rate at which energy and water resilience are obtained. The Army leverages private sector expertise through Energy Savings Performance Contracts (ESPCs) and Utility Energy Service Contracts (UESCs) to enhance resilience, improve efficiency, and contribute to resilience. ESPCs and UESCs allow companies and utilities to provide the initial capital investment to design, implement, and maintain energy and water conservation measures, the cost of which is paid over the course of the contract. These projects address maintenance backlogs and repair or replace aged and failing equipment using private sector capital repaid from savings realized over the contract term. While these projects have been historically targeted at reducing consumption and increasing reliability of systems, the Army is leveraging these projects to improve installation resilience. Working with the Department of Energy, effective repairs, coupled with the latest advances, will ensure the resilience of the bulk electrical systems to our critical facilities.

The Army has the largest ESPC program in the Federal Government and second largest UESC program. The Army awarded over $2.2 billion of third party investment in ESPC since 1996 and over $674 million in UESC investment since 1992. Contract costs are paid from commodity and operations cost savings, and therefore are budget-neutral. FY17 was the second-largest in the history of the program with a total

investment in ESPCs and UESCs of $289 million. In FY18, the Army awarded $113 million.

One recent example of an Army ESPC is located at Tobyhanna Army Depot in Pennsylvania. Awarded in 2016, the $29.5 million ESPC with Honeywell Inc. saves the Army $3.7 million annually through the elimination of outdated and inefficient steam heating systems. These were replaced with gas-fired heating, chiller plant optimization and consolidation, energy management control systems, building envelope improvements, water-conserving plumbing fixtures, and modernization of blast booth process and equipment. A recent example of an UESC is located at the Anniston Army Depot in Alabama. Awarded in 2016, this $21.7 million UESC with Alabama Power includes boiler upgrades, chiller and compressed air plant optimization and steam system upgrades to enable more efficient and reliable operation, and saves $2.17 million annually. These facility improvements not only produce energy savings, but also help lower the cost per unit of production. Both of these examples demonstrate budget neutral projects that required no upfront funding, improved equipment efficiency and reliability, and contribute to increased energy resilience.

In addition to ESPCs and UESCs, we are improving energy resilience through a number of different approaches including direct appropriations, third-party financing, utilities privatization, and by leveraging privately-funded infrastructure. Energy resilience sometimes requires onsite energy production. To this end, we are refocusing our “Office of Energy Initiatives” (OEI) that was previously engaged almost exclusively on the development of renewable energy projects, to an “Office of Energy Resilience”, focused on building energy resilience irrespective of technologies employed. In Hawaii, the Army OEI worked with the Hawaiian Electric Company to develop a 50 megawatt multi-fuel/biofuel generation plant capable of providing Schofield Barracks, Field Station Kunia, and Wheeler Army Airfield with secure energy during emergencies. The project is located above the tsunami strike zone and has “black start” capability to enhance grid resilience that benefits both the Army and the local community. This project increases the diversity of energy sources and the reliability of power supply, and also serves as a model for collaborative partnerships with utility service providers. Additionally, at Fort

Sill, Oklahoma, the Army is working with the Public Service Corporation of Oklahoma to build on site natural gas and solar power plants able to meet 100 percent of the installation's energy needs.

Conclusion

Army Readiness begins on installations. We need ready and resilient installations to ensure our Soldiers are properly trained and can be deployed anywhere in the world in order to fight and win our nation's wars. Collaboration with industry and government is essential to accomplishing energy and water resilience. We continue to seek appropriate opportunities to work with industry to enhance energy resilience and security to enable mission readiness, while modernizing and reforming the Army.

As we work to improve energy resilience, ESPCs and UESCs will remain an important tool at Army installations. Thank you for the opportunity to present this testimony and for your continued support of our Soldiers, Civilians and Families.