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The U.S. Army Office of Energy Initiatives is the central management office for large scale renewable energy projects leveraging third-party financing to bring energy resiliency to our Army installations. I would like to thank Professor Light for including the efforts of what is now the Office of Energy Initiatives in her paper. It was the success of the original task force that brought about the transition to an enduring office last year.

The United States Army has long recognized that if we are to be successful in our primary national defense mission, we have an obligation to ensure that our Soldiers today – and the Soldiers of the future – have the land, water, and air resources they need to train; a healthy environment in which to live; and the support of the local communities of the American people.

Environmental Stewardship:

The paper implies that the military does not have to comply with environmental regulations “when they conflict with the military’s national security mission”. In fact, we do have to be in compliance as the process for a National Security Exclusion is so onerous that it is unlikely to be approved. So to that end, the scope of our environmental stewardship responsibilities is amazing. The Army is responsible for nearly 14 million acres of land. We care for 217 endangered species, over 83,000 archeological sites, and over 62,000 historic buildings. We are also managing over 3,000 environmental permits, 1.3 million acres of wetlands, and are currently conducting environmental cleanup at over 1,600 sites. And we do it very well. The endangered red-cockaded woodpecker’s habitat has been so well protected at Fort Stewart, GA, that the population has recovered; and they are being exported to other areas for reintroduction. While we harvested over 790 acres of timber for the solar projects that will provide 90MW of clean affordable power at Forts Stewart, Benning, and Gordon, the Army will plant over 2,100 acres over the next two years of native longleaf pine, the habitat of the red-cockaded woodpecker, as part of the Army’s Environmental Enhancement and Protection Program.

. Securing Army installations with energy that is clean, reliable and affordable.

Sustainability Strategy:

The soon to be released Army Energy Security and Sustainability strategy establishes the underlying basis for an Army that adopts “security,” “resiliency,” and “future choice” as an organizing principle. The “Army Facilities Management” regulation, 420-1, is currently being revised to incorporate net zero in all its aspects, instilling these principles in everything the Army does to support its mission.

Operational Energy:

The Army’s energy and sustainability strategy does not end at our borders. When our current operations in Afghanistan and Iraq began, our enemies sought out our vulnerabilities; and they found and attacked our most susceptible point – our supply chain. Convoys carrying water, fuel, and supplies represented our greatest loss of life. We learned and we adapted. A forward outpost that a few years ago required replenishment of fuel and water every four days, through the employment of more energy efficient equipment, incorporation of tactical solar and wind power generation coupled with electrical storage, now only needs replenishment once every 10 days.

Fuel efficiency, energy conservation, waste reduction, and water reuse are not just phrases but integrated into our requirements and designs for the modernization of equipment – tactical vehicles and buildings – even temporary ones. Resource efficiency is necessary for the Army to minimize risk to mission objectives and reduce exposure of our Soldiers.

Climate Impact:

Climate change is a threat to the ability of the Army to perform its missions, affecting its installations and operations through impacts on training and Soldier and equipment readiness. As a global phenomenon, climate change will further stress regions and individual countries. The Army’s ability to accomplish our missions on a global scale depends on secure, uninterrupted access to the resources it needs including energy, water, land, and air. In the last 10 years, we have seen over a four-fold increase in power interruptions on Army installations from increasingly severe and frequent weather events to sabotage.

The Army is actively addressing climate change by examining what effects it will have on its installations and operations, and what adaptations can be made to lessen resource dependence while not reducing effectiveness. These adaptations are holistic, involving technology, behavior, doctrine, and other areas because of their interconnectedness and dependencies.

Technologies:

Currently exceptional opportunities exist for the military and the Army, in partnership with the private sector, to move ahead with the implementation of energy savings and renewable generation initiatives. The Army continues to support R&D and provide “test-beds” for new renewable technologies on its installations, particularly for microgrids and storage technologies that have the potential to improve energy security. But, because of

sequestration and other military budget reductions, Federal funding for these opportunities is highly competitive.

GENERAL AGREEMENT

Professor Light's paper presents a good overview of the military's position and response to increasing threats to our energy and water security and, our mission to protect the nation. She discusses how the military is leveraging private financing rather than taxpayer funds to drive innovation and that such public-private partnerships among the military, private financiers, and technology firms are an essential form of collaboration with the potential to transform our nation's energy profile for the better.

Mandates:

Professor Light also observes that Congressional and Presidential long-term energy and environmental mandates can provide "continuity across administrations" and promote stability and confidence in the private markets. The Army supports energy mandates and reporting requirements, as they provide direction and help measure our progress; but they must be realistic in light of current budgets and development timelines.

Financing:

In light of reduced government funding levels, innovative public-private risk sharing deal structures are being used to finance energy and water conservation, demand reduction, and development of renewable generation projects. These include 30-year power purchase agreements, enhanced use leases, and energy savings performance contracts. Regulatory and policy support for development of energy projects in partnership with the private sector is essential to effective use of these agreements.

Office of Energy Initiatives (OEI):

The OEI is used as an example of how the government can take advantage of private financing to develop large-scale renewable energy projects that it could not otherwise afford to build with appropriated funds. The OEI mission is to improve the energy resiliency of our Army installations so they can continue to conduct their critical national security missions in times of limited access to electrical power from the grid, whether caused by natural disasters or national emergencies. Due to existing financial limitations, cooperation with private industry is the most expeditious and financially prudent method to bring large scale generation stations on-line. Using off-the-shelf technologies, the OEI employs long-term PPAs to build facilities to provide power to the installation, or long-term leases to private developers to build facilities on Army land to provide power to outside off-takers. We also leverage existing agreements between utilities and the Army through GSA Area-wide contracts to build renewable generation facilities.

I am excited to announce that the Army currently has over 20 project opportunities in our development portfolio, representing over 550MW of potential renewable energy generation at Army installations across the country. Two projects are operational, including the recently commissioned biomass power plant that provides 100% of the electricity at Fort Drum, NY, and the DoD's largest solar project to date at Fort Huachuca, Arizona. Two are

under construction, including the solar facility at Fort Detrick, MD, for which we just broke ground last week, and what will become the DoD's largest solar project at Fort Benning, GA – the ceremonial ground breaking is next week.

Energy Savings Performance Contracts (ESPCs):

The Army has led the Federal government in the use of Energy Savings Performance Contracts to successfully reduce demand and improve energy efficiency. ESPCs enable energy service companies to implement energy and water savings technologies on Army bases – and the Army pays back the company for the project with the realized savings. The Army has executed over \$700M of ESPCs towards the President's performance contracting challenge, representing 40% of the Federal Government's total.

Net Zero:

The Army Net Zero Strategy strives to bring the overall consumption of energy, water, and waste on our installations down to an effective rate of zero by using the principles of integrated design to appropriately manage resources. Net Zero is considered a Force Multiplier because reducing our energy, water, and waste demands frees up resources that can then be used to achieve Army missions. Once a pilot initiative, Net Zero is now policy at all permanent Army installations.

Lessons Learned / Communication:

The value of lessons learned and open communication with the private sector is emphasized by Professor Light. Each of the Army efforts just discussed has brought the Army and the private sector together and shown the value of sharing lessons learned - sharing with our industry partners how the government process works, as we learn industry best practices and establish a mutual understanding of each other's needs and requirements. Collaboration with other government agencies, industry, NGOs, academia, and our surrounding communities is a long- standing Army practice that continues to benefit all parties.

One of the lessons learned by the OEI in our work with the private sector is that there are two requirements for a successful project. Reasonable profit must be made by private developers who invest in our projects, and the projects must serve the Army mission. Only by developing competitive, commercially viable projects, can we successfully attract private investors to finance them. And only if these projects support the Army mission will the OEI be trusted to work with the installations that benefit from the projects. This dual requirement minimizes the risk of a return to the excesses of the past.

Summary:

Professor Light states that there is a competition between the needs of the U.S. military and the natural environment. We don't see it that way. The slogan of one Army Project Management Office is "The World's Ultimate Weapon Runs on Water, Everything Else Runs on Fuel". Today's Army evaluates energy, water, and land use in every decision as it not only affects the true life cycle cost of operations and the potential success of our mission, but lack of adequate evaluation of these impacts could place at risk America's

most precious resource – its sons and daughters – our posterity.