

Welcome to the February edition of Defense Operational Energy Highlights, published by the Office of the Assistant Secretary of Defense for Operational Energy Plans and Programs!

Recent Updates:

> ASD Burke Visits the Pacific Northwest

ASD Burke made a swing through Washington State and Oregon on January 28/29 to discuss the Pentagon's rationale for investment in new energy technologies. At the Washington Clean Tech Association Clean Energy Forum, ASD Burke joined former Secretary of Defense Robert Gates, Governor Jay Inslee, Representative Adam Smith, and others to discuss the important role the Pacific Northwest can play as the Department continues its strategic rebalance towards the Pacific. Also, in Seattle and Portland, ASD Burke met with dozens of companies to discuss how small businesses and entrepreneurs can access the Department of Defense and help outfit our troops with the cutting-edge energy technology that will help them improve their combat effectiveness.

\* See ASD Burke's presentation to the WA Clean Tech Association Forum:

<http://bit.ly/wMMLP3>

\* Read a media account of Secretary Gates' remarks: <http://bit.ly/Wo8iPD>

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> Marine Corps Briefs Industry on Mobile Electric Hybrid Power Sources (MEHPS)

Mobile Electric Hybrid Power Sources – portable systems that yield significant fuel savings, increase combat capability, and "lighten the load" – were successfully deployed for the first time to Afghanistan in summer 2010. To build upon this success, the Marine Corps conducted the Mobile Electric Hybrid Power Sources (MEHPS) Analysis of Alternatives (AoA), the results of which will define the key features of future hybrid power sources. On 31 January 2013, Col Robert Charette and Maj Brandon Newell of the USMC Expeditionary Energy Office (E20) briefed industry on the results of the MEHPS AoA and future plans, including:

- Power requirements (distinct power demand bands, transportation limitations of each power demand band)
- Power profiles used to evaluate alternatives and sensitivity analysis
- Modeling created to analyze MEHPS performance and results
- Results of analysis that frame the system attributes within the MEHPS family of systems
- Impact of renewable energy, battery storage, and the gridding of multiple generators at the various levels of the MEHPS power demand bands.

The bottom line: Hybrid power systems continue to be of interest to USMC and will be the focus of the next Experimental Forward Operating Base demonstration (ExFOB 2013-1) in May 2013.

\* Watch the briefing here (video): <http://bit.ly/Y5qJX0>

\* For more information, please visit E2O's website ([www.hqmc.marines.mil/e2o](http://www.hqmc.marines.mil/e2o)) or contact Maj Brandon Newell ([brandon.newell@usmc.mil](mailto:brandon.newell@usmc.mil)).

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> Crimson Viper Tests OE Technology in Tropical Environments

Crimson Viper 2012, the latest annual collaborative experiment between DoD and the Royal Thai Ministry of Defense, tested technologies in Thailand last summer designed to reduce Operational Energy consumption in tropical environments while maintaining or improving warfighter capability. A recently completed TROPEC Crimson Viper 2012 report provides results of a Limited Operational Assessment (LOA) of energy saving technologies, including: radiant barrier tents, heating and air-conditioning units with two-stage compressors and variable-speed fans, LED shelter lights, and occupancy and manual lighting controls.

Findings included:

- LED lighting energy savings estimated at 25% compared to fluorescent. Hybrid lighting controls save ~ 48% of lighting energy (hybrid lighting = one light string controlled by an occupancy sensor, one manually). Combining the two would save approximately 60%.
- A new experimental two-stage air conditioner used 67% less energy than a control US Marine Corps air conditioner (retired) used as a baseline.
- Energy savings from the radiant barrier liners was 31% for tents using the experimental air conditioner.

\* The TROPEC team is looking for new technologies to test - send them information about your tech: [www.tropec.net](http://www.tropec.net)

\* For a copy of the report, please email: [energy@osd.mil](mailto:energy@osd.mil)

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> Next Generation Efficient Contingency Base Camp Policy Signed

Last month, DoD took a big step in our effort to develop a clear policy and approach in the way we design, build, and maintain next-generation contingency bases, which have been a major user of energy in the conflicts of the past decade. On January 10th, Deputy Secretary of Defense Ash Carter signed a new DoD Directive on the topic. The Directive, driven by DoD's Installations and Environment Office, focuses on developing criteria for facilities, equipment, and services for contingency locations. With these new policies, DoD aims to increase effectiveness and efficiency in contingency basing through:

- Interoperability with joint, interagency, intergovernmental, and multinational partners
- Efficient use of operational energy
- Common standards for contingency basing
- Optimizing the delivery of materiel solutions, contracting practices, and services to minimize the logistics footprint.

Stay tuned for further updates as the Department begins to implement DoD Directive 3000.10!

\* Read the Directive (PDF): <http://go.usa.gov/4PzR>

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> \$8.5M in New Battlefield Energy Investments

On January 23, ASD Burke joined Tom Hicks, Deputy Assistant Secretary of the Navy for Energy, and Cheryl Martin, Deputy Director of the Department of Energy's Advanced Research Project Agency - Energy, to announce \$8.5 million in new energy investments. These awards, made from DoD's Operational Energy Capabilities Improvement Fund (OECIF), help to foster advances in energy performance for military equipment - in this case, creating next-generation, deployable heating and cooling technologies that could help the military significantly reduce its energy demand on the battlefield.

While announcing the new investments, ASD Burke explained the impact that these awards will have: "As we've seen in the wars in Iraq and Afghanistan, thousands of troops have been killed or injured moving fuel that powers our equipment, including heating and cooling systems, when our adversaries target supply convoys on the battlefield. By harnessing energy efficient and new energy technologies, we've helped our troops spend less time moving and protecting fuel, and given them more time to focus on their missions. In short, better energy options help make our forces more flexible and agile in combat."

The five awardees are:

- ADMA - Hudson, Ohio
- Dais - Odessa, Florida
- Georgia Tech - Atlanta, Georgia
- Pacific Northwest National Lab - Richland, Washington
- Infinia - Kennewick, Washington

\*Read a story about the effort: <http://bit.ly/XzDuJr>

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> DoD's Energy Assistance During Hurricane Sandy

In late October 2012, Hurricane Sandy devastated a wide swath of the East Coast. DoD responded to this unprecedented storm with unprecedented support to civilian authorities. By mobilizing over 14,000 personnel, DoD supported search and rescue missions, provided meals and blankets, and helped pump tunnels.

And, with over eight million people without power, DoD also responded by providing emergency power generation and power restoration assistance. The Defense Logistics Agency provided 9.3M gallons of fuel to hospitals, first responder staging locations, 911 centers and broadcast towers and gas stations. US Transportation Command airlifted hundreds of utility trucks and power crews to New York and New Jersey. And the Army Corps installed generators at gas terminals, ferry buildings, and public housing.

Even as we review what worked and what could work better in support of civil authorities in future disaster relief operations, it's clear that the DoD response was critical in helping the East Coast get on its feet.

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> DoD and DOE get AMPED!

In January 2013, DoD representatives working on the Hybrid Energy Storage Module Program (HESM) participated in the kickoff meeting for the DOE ARPA-E Advanced Management and Protection of Energy-storage Devices (AMPED) program. The meeting highlighted the close relationship the agencies have in the development of next generation critical energy storage systems for both civilian and defense applications.

For the military, these programs support advanced technology development that provides the capability to enhance fuel efficiency, maximize performance and reliability, and enable future high power weapons and sensor systems on legacy and next generation Army and Marine Corps battlefield generators, vehicles, Air Force and Navy aircraft, and Navy ships. The goals of this project are to demonstrate scalable energy storage systems with high power and energy densities that reduce the total demand for fuel, reduce maintenance events, and increase the ability of our military platforms to sustain operations during combat.

\* Learn more about AMPED: <http://arpa-e.energy.gov/?q=arpa-e-programs/amped>

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> Tweet of the Month:

On January 14, The Naval Research Lab (@USNRL) tweeted:

New multi-junction solar cell could break efficiency barrier  
<http://go.usa.gov/4Ub4> @ENERGY @ARPAE #solar #technology

> Bonus Tweet of the Month:

On February 3, after power went out at the Super Bowl, The Defense Logistics Agency (@DLAMIL) tweeted:

Should #DLA send generators and gas? You know we could! #SB47

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@ASD\_SharonBurke on Twitter

facebook.com/sharon.e.burke

<http://energy.defense.gov>

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About DoD Operational Energy Plans and Programs:

Established in 2010, the Office of the Assistant Secretary of Defense for Operational Energy was created to strengthen the energy security of U.S. military operations. The mission of the office is to help the military services and combatant commands improve military capabilities, cut costs, and lower operational and strategic risk through better energy accounting, planning, management, and innovation. Operational energy, or the energy required to train, move, and sustain forces, weapons, and equipment for military operations, accounted for 75 percent of all energy used by the Department of Defense in 2011.