

Operational Energy Innovations at the Tactical Edge

By Oliver Fritz | December 04, 2014

The Office of the Assistant Secretary of Defense for Operational Energy Plans and Programs recently released an infographic on the role of energy innovation in global operations.

Driven by the desire for increased capability, the Department's energy requirements have been increasing. In fact, lessons learned demonstrate the risks that often accompany supplying energy to distributed bases in the face of determined adversaries and inhospitable geography.

In response to these risks, the Department is pursuing a range of initiatives to increase the capabilities of our forces at the tactical edge. Including base camps in Afghanistan, airlift aircraft in the sky, and Burke class destroyers at sea, the Department is enhancing the resilience, endurance, and agility of the force.

This latest infographic is one of a continuing series that examines the roles of operational energy in warfighting and the Department's improvements in its use of energy. Please contact us at osd.operational-energy@mail.mil with suggestions and ideas for future graphics.

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OPERATIONAL ENERGY INNOVATIONS AT THE TACTICAL EDGE
Improving Combat Capabilities Around the World

Advanced Generators
The Advanced Medium Mobile Power Systems (AMMPS) uses 21% less fuel and is 95% more reliable than standard generators.

Operation Dynamo
Teams installed energy efficient advanced generators, air conditioners and power distribution systems, reducing risky resupply. As a result, one Afghanistan base required 48 fewer fuel airdrops in a year.

Hybrid Electric Drive
Powering the DDG-51 main shaft with an electric motor instead of a gas turbine could save enough fuel for 10 extra days on station per year.

Conformal Battery
The conformal wearable battery is part of a system that reduces the number of batteries by 70% and the weight by 32% for a 72-hour mission.

GREENS
Marines in Afghanistan used GREENS, a portable solar array, to operate two patrol bases entirely on solar power, and reduce fuel consumption at a third base by 90%.

Precision Airdrop
Precision airdrops of fuel reduce the need for ground resupply through dangerous terrain, protect warfighters, and enable sustained forward presence, with some bases supplied entirely by air.

Solar in SOUTHCOM
A 100 kW solar farm at a contingency base in El Salvador produces 30% of its electricity.

Kuwait Energy Efficiency Project (KEEP)
KEEP will provide over 1,100 Camp Buehring soldiers with insulated, modular shelters that better withstand power outages and are up to 75% more energy efficient than tents.

Office of the Assistant Secretary of Defense for Operational Energy Plans and Programs

Learn More At: <http://energy.defense.gov>