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Navy Task Force Energy Tactical Investments

"It's more than simply how green can we be seen, it really is an operational issue for us."
– **Admiral Gary Roughead, Chief of Naval Operations**

Investments in tactical energy initiatives, which will improve energy efficiency and include reliable sources of fuel, enhance combat capability by extending the Navy's operational reach. Navy platforms operating at sea today, including those in support of Operation New Dawn, feature energy efficient equipment.

Investments in Energy Efficient Engines:

- The USS Makin Island (LHD 8) Auxiliary Propulsion System (APS) was designed with fuel efficiency in mind. Instead of using main propulsion engines at low speeds, the APS uses induction-type motors powered from the ship's electrical grid. The APS can be used approximately 75 percent of the time.
- Hybrid Electric Drive (HED) is currently being developed for Arleigh Burke class (DDG 51) destroyers. This proof-of-concept system is scheduled for demonstration at sea in 2012. HED is expected to save 8,500 barrels of fuel/year per DDG.

Investments in Alternative Fuels:

- Alternative fuel test and certification represents one of several Navy Task Force Energy initiatives to reduce demand for non-renewable fossil fuels. Alternative fuels provide less dependence on this singular energy source and give the Navy options beyond petroleum
- The Navy's alternative fuel strategy for the fleet is designed to support SECNAV's energy target of increasing alternative energy use to 50 percent Navy wide by 2020.
- The Navy is testing and certifying alternative fuels as part of its broad strategy to enhance energy security and environmental stewardship, including reducing greenhouse gas emissions.
- The "Green Hornet" successfully flew using a 50/50 blend of conventional jet fuel and camelina biofuel. The Green Hornet biofuel program is the first aviation test program to test and evaluate the performance of a 50/50 biofuel blend in supersonic (above mach 1) operations. A 50/50 blend of algae-based fuel and conventional ship fuel was demonstrated in a 7-meter rigid hull inflatable boat, and testing is underway on an experimental Riverine Combat Boat, the RCB-X. Upcoming platforms to be tested include the MH-60S and V-22.

Key Messages

- Energy Security is critical to mission success. Energy security safeguards our energy infrastructure and shields the Navy and Marine Corps from a volatile energy supply.
- Energy efficiency increases mission effectiveness. Efficiency improvements minimize operational risks, saving time, money, and lives.
- Alternative fuels provide the Navy an 'off-ramp to petroleum,' mitigating the risk to a volatile petroleum market.
- Environmental stewardship protects mission capabilities. Investments in environmentally responsible technologies afloat and ashore lessen dependence on fossil fuels and reduce green house gas emissions.

Facts & Figures

- Nine months of Navy energy usage reporting data for Makin Island shows that the average fuel consumption underway (20.31 BBLs/HR) averaged less than half of LHDs without APS (41.1 BBLs/HR).
- Other energy saving technologies being tested include:
  - Hull Coatings on USS Port Royal and USS Cole
  - Propeller coatings on USS Gunston Hall
  - Stern flaps on USS Kearsarge and USS Whidbey Island
  - Solid state lighting (LED) on USS Iwo Jima and USS Wayne E. Meyer
  - Smart Voyage Planning Decision Aid at Naval Maritime Forecast Centers in Norfolk and Pearl Harbor.