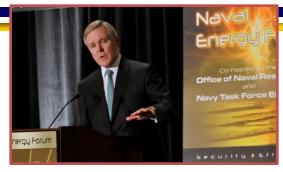


DEPARTMENT OF THE NAVY ENERGY PROGRAM

Chris Tindal Director for Operational Energy Deputy Assistant Secretary of the Navy for Energy

Department of Navy Energy Goals







Increase Alternative Energy Department-wide

Increase Alternative Energy Sources Ashore

> Reduce Non-tactical Petroleum Use

Sail the "Great Green Fleet"

Energy Efficient Acquisitions

By 2020, 50% of total Department energy consumption will come from alternative sources

By 2020, at least 50% of shore-based energy requirements will be met by alternative sources; 50% of Department installations will be net-zero

By 2015, Department will reduce petroleum use in vehicles by 50%

Department will demonstrate a Green Strike Group in local operations by 2012 and sail it by 2016

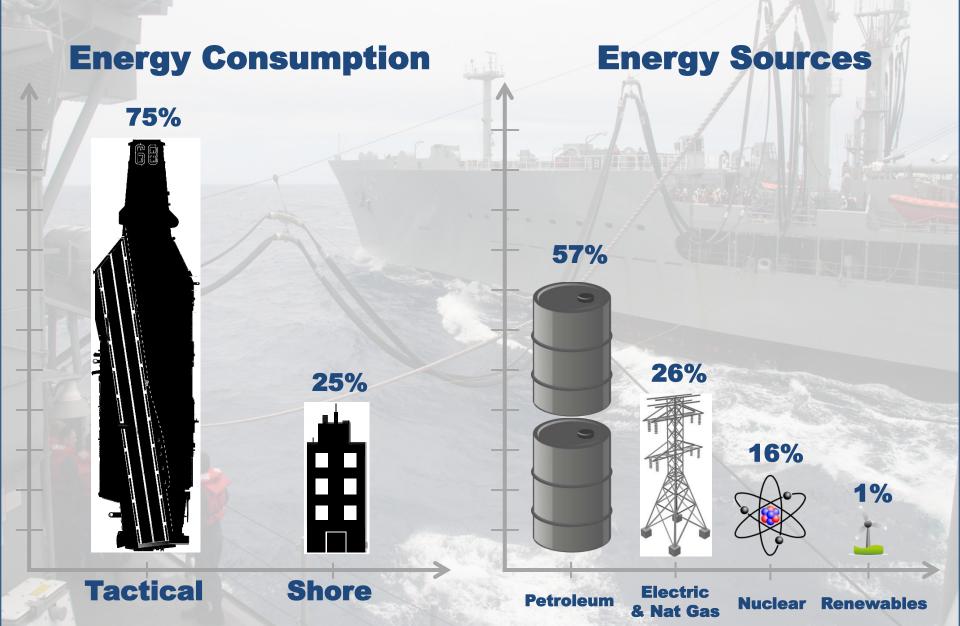
Evaluation of energy factors will be mandatory when awarding contracts for systems and buildings

Assistant Secretary of the Navy

(Energy, Installations & Environment)

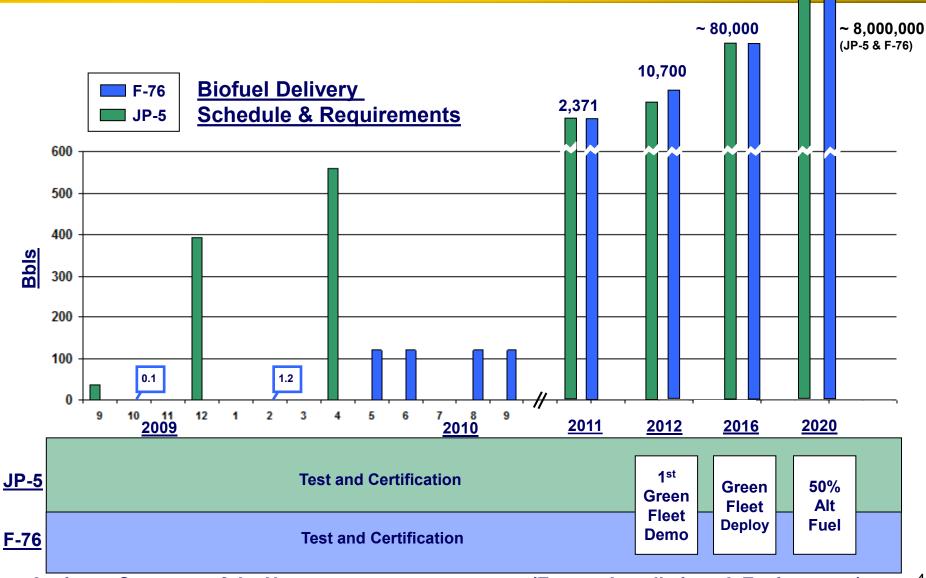


Naval Energy Profile









Assistant Secretary of the Navy

(Energy, Installations & Environment)

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Aviation Testing Progress





Assistant Secretary of the Navy



Ship Testing Progress





Pacific Ocean USS Princeton (CG 59) pulls oiler USNS Henry J. Kaiser (T-AO 187)

Royal Australian Navy S-70B Sea Hawk helicopter

2012 GGF DEMONSTRATION

SECNAV and CNO aboard USS Chafee

USS Princeton (CG 59) ,USS Nimitz (CVN 68)















GGF After Action Report

- 1,800 hours of shipboard gas turbine operation
- 240 flight hours
- Four ship-to-ship RAS evolutions
- One air-to-air refueling
- No operational differences noted:
 - Logistics Infrastructure
 - Ship power plants and aircraft
 - Filters operated more efficiently due to fewer impurities in the fuel



Richard Kamin Navy Fuels Team 1 Oct 12

ssue: Great Green Fleet RIMPAC 2012 Biofuel Test and Evaluation

Summary: The Rim of The Pacific (RIMPAC) bi-annual international Naval operational exercise served as the location for the U.S Navy's alternative fuel at-sea operational test and evaluation. Approximately 900,000 gallons of fuel (700,000 gallons F-76 and 200,000 gallons JP-5), 50% of which was produced from non-petroleum sources, was successfully tested during the exercise. A 50% biobased/50% petroleum based JP-5 and F-76 were evaluated by one shore orage facility (FLC Puget Sound), one Military Sealift Command Otler (USNS Henry J. Kaiser (T-AO 187)), three Surface Combatants (USS Chafee (DDG 90), USS Chung Hoon (DDG 93), USS Princeton (CG 59)), one aircraft carrier (USS Nimitz (CVN-68)) and nine carrier based ircraft models (F/A-18 C/E/F, MH-60 R/S, EA-6B, E-2C, C-2A and Royal Australian Navy S-70B). The successfully completed testing included 1800 hours of shipboard gas turbine operation, 240 flight hours, four ship to ship refueling at sea (RAS) evolutions, one aircraft to aircraft aerial refueling, as well an evaluation of the full Navy at sea faels logistics infrastructure No operational differences, no deviation from standard operating procedures (other than segregation to prevent blending into the larger bulk fuel supply thus maintaining the percentag of biobased fuel in the blend), no unusual leaks or hardware failures and no changes in aircraft or ship performance were identified. The unanimous opinion from the shore facility, ship and aircraft personnel was that the 50% biobased JP-5 and F-76 was operationally similar to the etroleum based JP-5 and F-76 that had been used both prior to and after the biofuel testing. The RIMPAC 2012 Great Green Fleet trial provided real world operational validation of the laboratory, test stand and controlled platform test results that have been previously conducted as part of the Navy's alternative fuel qualification program.

Background: In support of the Navy's Energy Goals, testing has been on-going to qualify nonperioleum sources as acceptable materials to be used in the production of the Navy's at-sea tactical avaited (P-2) and matrime (P-7) fasts. The source-production process source chosen for evaluation was hydroprocessed esters and farty acids (HEFA). HEFA can be produced from multiple sources including oil seed plants, algae, tailow and waste oils. Qualification testing was conducted on a 300 KEFA based 300% periodem based bland that set all current IP-5 (sviation) or F-76 (http) specification requirements. In accountance with the Navy's alternative fault qualification protocols, testing was successfully completed in the laboratory, on the test stand, and in over a dozen thip and arcters platforms.

Following successful completion of platform testing, the next phase of the qualification protocol was to test the fault's performance in a non-controlled operational environment. This not only allowed the valuation of the performance by Beet personnel using non-test assets four also allowed the synchronance to be evaluated across the entire at-ioa fault logistic infrastructure. The 2012 RDMPAC exercise was chosen to conduct this testing. These surface combatants (USS Princeton (CG 59), USS Chaffe (DDG 69) and USS Chung Hoon (DDG 63), a Milliary Sealift Command oiler (USNS Heary J, Kaiser (T-AO 187), an aircraft carrier (USS Minisr CVN 68).





- DON, DOE, and USDA have partnered to use the Defense Production Act (DPA) Title III and the Commodity Credit Corporation (CCC) to bring multiple, commercial-scale, cost-competitive integrated biorefineries online
 - Addresses all risk areas: feedstock (USDA Commodity Credit Corp), CAPEX/OPEX (DPA Title III), and offtake (DON end user)
 - Cost-competitive with conventional petroleum w/o subsidies
 - Produced domestically
 - EISA 526 Compliant (GHG ≤ petroleum)
 - Derived from an acceptable feedstock
 - Suitable for military use (JP-5, JP-8, F-76)
 - No more than a 50% government cost share





- Timeline:
 - Funding Opportunity Announcement Issued: June 2012
 - Phase 1 Finalists Notified: Fall 2012
 - Phase 1 Awards: Early 2013
 - Phase 2 Proposals and Negotiations: End of FY13
 - Phase 2 funds required to commence Phase 2 proposal process
 - Phase 2 Commence: Early 2014
 - First Fuel Delivered: 2015-2016 (Great Green Fleet Deploys)

Assistant Secretary of the Navy





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- DON/DOD \$100M FY12 funding from within the DPA Title III funds
- USDA FY13 \$171M in CCC funds non-discretionary
- DON/DOE FY13 total budget request \$110M DPA funds of \$70M from DON and \$40M from DOE
- DOE FY14...

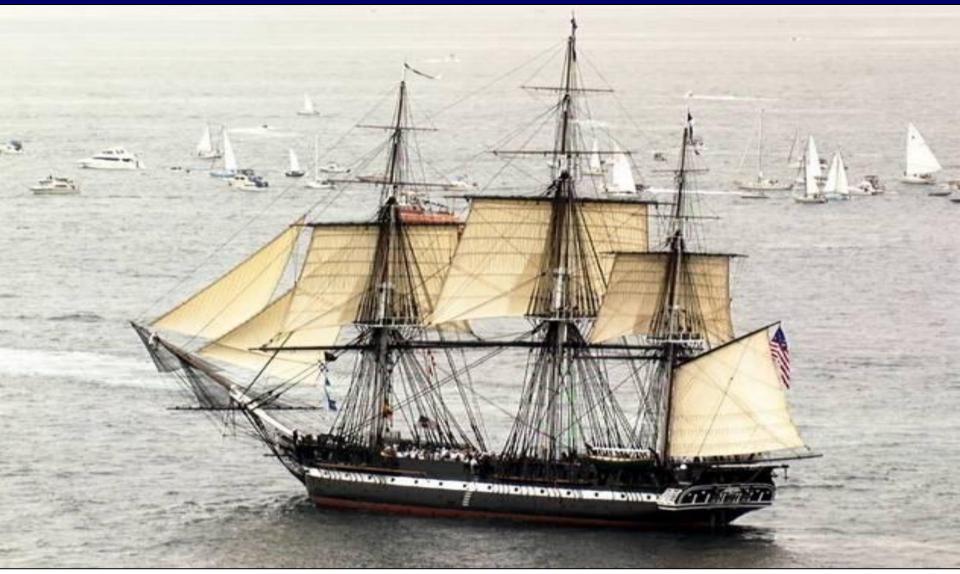




100% Renewables-Powered



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THANK YOU

F/A-18E Mt. McKinley, Alaska

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