

Secretary Mabus Provides Insights Into Goals & Ongoing Efforts to Increase Our Energy Independence

FOR EVERY 50 supply convoys in Afghanistan, a U.S. Marine dies or is wounded. And with water, fuel is the largest commodity we import into Afghanistan. A ship is rarely more vulnerable than when it is refueling, as the USS Cole was in 2000 when it was attacked in the Yemeni port of Aden. Every time the cost of a barrel of oil goes up a dollar, it costs the U.S. Navy \$31 million in additional fuel costs. Recent political unrest in Libya led to an increase in oil prices that ultimately cost the U.S. Navy \$1.5 billion. We rely too much on fossil fuel that comes from actually and potentially volatile places.

While we would never allow some of the nations that sell us oil to build our ships, aircraft, or ground vehicles, through our dependence on their oil, we give them a say in whether our ships sail, our aircraft fly, or our ground vehicles operate.

To help address these strategic and tactical vulnerabilities, I announced five goals for the Navy and Marine Corps in an effort to increase our energy independence and to save lives. The broadest goal is that, by no later than 2020, the Navy and Marine Corps both afloat and ashore will produce at least half of its energy from non-fossil-fuel sources.

fuel.” Modern warfare has changed significantly since World War II, but our sources of energy have not. Changing the kinds of fuels we use and the way we use them is critical to assuring the Navy and Marine Corps remain the most formidable expeditionary fighting force the world has ever known.

The sound tactical reasons for change are not limited to the Navy. Just think of the resources expended in transporting one gallon of gasoline to a Marine unit in Helmand province in Afghanistan. That gallon must first cross either the Atlantic or the Pacific Ocean and then travel by convoy over land, north through Pakistan or south through the Northern Distribution Network, crossing the Hindu Kush mountain range or the Amu Darya River to reach that Forward Operating Base. The Marines who guard these convoys are taken away from doing what Marines were sent to Afghanistan to do, which is to fight, to engage and to rebuild.



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Countries, governments, and militaries across the world have long recognized the strategic and tactical importance of energy sources. In his new book about the Navy's role in the Guadalcanal campaign of 1942, *Neptune's Inferno*, author James Hornfischer commented on the energy challenges the Americans and the Japanese faced in that battle, “when ships were more powerful than they had ever been before, but were effectively tethered to bases by their insatiable need for

Transitioning to alternative fuel sources is a significant part of the Department's overall strategy to strengthen our energy security. Over Labor Day weekend, for the first time ever, the U.S. Navy's Blue Angels flew all six of their F/A-18s on a 50/50 mix of conventional aviation gasoline and advanced biofuels. The first F/A-18 Hornet tested on drop-in biofuels, dubbed the Green Hornet, went 1.7 times the speed of sound on a mixture of camelina and aviation gas. In August 2011, we tested the T-45 trainer and the Marine

V-22 Osprey—the tilt rotor aircraft—on advanced biofuels. We are in the process of testing all our aircraft and surface ships to use advanced, drop-in biofuels. By the end of the fall, we will have certified biofuels for every single aircraft in the Navy and Marine Corps inventory. And, at President Obama’s direction, we have partnered with the Departments of Agriculture and Energy to assist in the development of a domestic biofuels manufacturing base which will be able to meet the Navy’s demand for biofuels and at the same time create new jobs here in America.

We are also developing other alternative sources of energy like solar and geothermal power. In the midst of a tough fight in the town of Sangin in Afghanistan, the 3rd Battalion 5th Marines reduced their need to be resupplied with batteries by using solar blankets to power their radios and Global Positioning Systems. Last year, the Navy and Marine Corps tripled the amount of solar power produced on our installations, and this year we will double that amount again. China Lake, our naval base in California, is now producing through geothermal energy more energy than it uses. By 2020, at least half of all our land bases will run an energy surplus.

How energy is expended is one of the ways we’ll work toward becoming better stewards of our valuable resources. We are also studying ways to make energy a determination in all our new contracts. These efficiency measures will save money and increase our energy independence, but most importantly, they will save the lives of Marines, of Sailors, of soldiers, and of airmen.

Throughout the history of the U.S. Navy and Marine Corps, we have been at the forefront of technological change. In the middle of the 19th century, we moved from sail to coal-fired steam power; fifty years later we moved from coal to oil; and then we added nuclear power to the Fleet in the 1950s. With each transition, there were naysayers who said such far-reaching changes could not—or should not—be done. They were wrong then, and they will be wrong this time as we move to make our nation more secure and save the lives of Sailors



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In addition to developing alternative sources of energy, we are seeking ways to use fuel more efficiently. We have installed a hybrid electric drive on the USS Makin Island that allows the ship to operate on full power with regular diesel, but rely on cheaper electric power when it is cruising at lower speeds. In its maiden voyage, that hybrid power system saved about \$2 million in fuel costs and over the life of the ship, will save an estimated \$250 million—and that is at 2010 prices. In today’s constricted budget environment, it only makes sense to retrofit many of our ships with the same type of drive and put that savings toward giving our Marines and Sailors the tools they need to do their jobs defending our country.

With over three million acres of land, 72,000 buildings, and over 50,000 non-combat vehicles, the Navy and Marine Corps can recoup significant energy savings on our installations with more efficient fuel use. Installing smart power

and Marines. This is what the U.S. Navy and Marine Corps has done for 235 years: adapt, innovate, create and come out the other side victorious.

I could not be more proud to be leading this department during such a critical time for our department and our country. October is National Energy Awareness month, so it is entirely appropriate that *Currents* dedicates this issue to energy security and independence. I count on each of you to incorporate into your mission ways to contribute to these energy goals. Work with your chain of command to find ways to be more energy effective and efficient. The Department of the Navy is leading the way, creating a new way of operating that will make our Sailors and Marines safer, our country more independent from outside influences, and our economy more self sustaining and stable. You must be a part of that future. ⚓

Secretary Ray Mabus