Powering the Pentagon: Creating a Lean, Clean Fighting Machine

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Abstract (summary)

Last year, the US Department of Defense was the single largest consumer of fuel in the US, using about 90 million barrels of oil, at a cost of nearly $15 billion. The US military's fuel demands may not seem problematic today. But they will be in a future in which a range of potential adversaries could target supply lines with precision, thanks to advanced weapons. The Pentagon hopes to transform the US military from an organization that uses as much fuel as it can get to one that uses only as much as it needs. The benefits of the Pentagon's drive for energy efficiency go well beyond improving the US military's energy security and lowering its costs. The Pentagon's investments in energy efficiency and renewable sources will primarily benefit its core mission, but they also have the potential to contribute to improving energy efficiency and cutting down on fossil fuel consumption across the US.

Full Text

In the immediate aftermath of World War II, the U.S. naval aviator Thomas Moorer questioned Takeo Kurita, a former vice admiral of the Imperial Japanese Navy, as part of the U.S. military's postwar interrogation of Japanese commanders. Kurita told Moorer that one of the most significant reversals of fortune Japan had suffered during the war was the loss of fuel supplies. "We ran out of oil," Kurita said, and by the end of the war, the Japanese military had grown so desperate, it was operating its equipment on fuel distilled from old tires, rice, and even pine needles. "What I learned then," Moorer would note years later, "was never lose a war, and the way to lose a war is to run out of oil."

Last year, the U.S. Department of Defense was the single largest consumer of fuel in the United States, using about 90 million barrels of oil, at a cost of nearly $15 billion. The fuel requirements of the U.S. armed forces accounted for approximately 1.3 percent of all U.S. petroleum demand and more than 80 percent of the federal government's total fuel consumption.

Although the United States is not in any immediate danger of running out of oil today, the U.S. military's heavy reliance on fuel could become a liability, given that U.S. forces must be able to travel long distances on short notice. And President Barack Obama's rebalancing of U.S. strategic interests to the Asia-Pacific region only further underscores the importance of U.S. mobility.

The U.S. military's fuel demands may not seem problematic today. But they will be in a future in which a range of potential adversaries could target supply lines with precision, thanks to advanced weapons. To confront that risk, the Pentagon hopes to transform the U.S. military from an organization that uses as much fuel as it can get to one that uses only as much as it needs. It plans to build a force that requires less energy to operate and can adapt its use of various energy supplies and technologies to fit the needs of different contingencies and campaigns. The Pentagon still has a long way to go before it can realize these goals. But from bases in Afghanistan that have cut their energy use by a quarter to the development of more efficient engines, the U.S. military has already begun improving its energy security in ways that make economic, environmental, and strategic sense. The stakes are also high for the civilian economy. The International Energy Agency has estimated that the world will need to invest some $37 trillion in new energy technologies by 2030 in order to meet rising global demand. Therefore, a more energy-efficient U.S. military may well help drive the innovation so urgently needed in the civilian economy, too.

NEVER BREAK THE CHAIN

Since the birth of the petrochemical industry in the mid-nineteenth century, fuel has fed victory—and defeat—in war. "At the present time, my chief difficulty is not the Germans but gasoline," General George Patton wrote in August 1944, as fuel shortages at the front limited the U.S. Third Army's advance into Germany. "If I could only steal some gas, I could win this war."

Today, U.S. forces in Afghanistan have few such complaints, thanks to the long reach of U.S. military logistics and the Pentagon's well-honed ability to secure energy supplies on the interna-tional market. But getting fuel supplies to the battlefield still carries significant risks. Consider Combat Outpost Jaghato, south of Kabul, one of hundreds of small U.S. bases throughout Afghanistan. Before the camp closed last year, it housed nearly 100 soldiers. They carried out most of their combat and training missions on foot but still went through an average of about 500 gallons of fuel every day to run armored vehicles and generators, which provided electricity for, among other things, computers, lights, and heaters.

Given the difficult, dangerous terrain that surrounded the outpost, most of Jaghato's fuel arrived via twice-monthly aircraft deliveries. According to the Pentagon's analysis, moving fuel by air to such remote positions takes about two gallons of fuel for every gallon supplied. Counting transportation and protection requirements, a gallon of fuel for outposts such as Jaghato has an effective cost of roughly $40.

But not every combat outpost in Afghanistan has its fuel delivered this way. Other locations are supplied by truck from the Pakistani port of Karachi and then overland through Pakistan. This method of delivery is generally cheaper than sending fuel by air, depending on the route and the escort requirements, but in some cases, it exposes the supplies and personnel to a significant risk of attack by the Taliban and other groups on both sides of the Afghan-Pakistani...
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Mail delivery services, commercial airlines, and large retailers face logistical challenges of their own and rank among the largest fuel consumers in the United States. Fuel costs accounted for 30 percent of United Airlines' budget and 11 percent of FedEx's in 2013. Numbers such as those have driven many firms to improve their energy efficiency and diversify their fuel options for the sake of their bottom lines. They would benefit greatly if the U.S. military shared its energy innovations with them; the Pentagon will make every reasonable effort to do so.

For now, the well-being of every American depends on reliable, steady access to fossil fuels. But down the road, economic and environmental pressures will make energy efficiency and cleaner energy urgent priorities. The Pentagon's investments in energy efficiency and renewable sources will primarily benefit its core mission, but they also have the potential to contribute to improving energy efficiency and cutting down on fossil fuel consumption across the United States. In that way, as the Pentagon pursues smarter energy policies in order to build a stronger military force, this may well mean better national security, too.

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In 2010, SHARON BURKE was named the first-ever U.S. assistant secretary of defense for operational energy plans and programs, tasked with helping the Pentagon shrink its vast energy footprint. A graduate of Williams College and Columbia University's School of International and Public Affairs, Burke has served on the State Department's Policy Planning Staff and as a speechwriter for the secretary of defense. In "Powering the Pentagon" (page 33), she tells the little-known story of the U.S. military's drive for energy efficiency and technological innovation.