Drop and Give Me Efficiency: Can the Military Change American Minds on Climate?

CLIMATE CONFIDENTIAL

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OVERVIEW

The Department of Defense called out climate change as a major threat to national security in its latest Quadrennial Report, validating both climate science and the need to do something about climate change. Could the military's funding of cleantech projects and the DoD's stance on climate change help change Americans' minds on climate change?

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BY AMY WESTERVELT

When people talk about the military-industrial complex, it's usually in the pejorative. We tend to focus on excess warheads and toxic chemicals that have made their way from the battlefield to the cornfield. And rightly so. We have more weapons than we could possibly need and many of the environmental plagues of today — excess pesticide use and myriad disposable plastic items,

to name two — can be traced back to the military-industrial complex. But so can the Internet, computers, and Global Positioning Systems (GPS).

Just as it has played an important role in technological advancement, the military has historically held a good deal of sway over cultural values, particularly for conservatives. Yes, the military's mishandling of sexual harassment and rape has been credited with helping to perpetuate rape myths. But the racial integration of the armed forces was a major tipping point for the civil rights movement, and the repeal of Don't Ask Don't Tell was considered a big win for gay rights advocates. In all cases, military policies have had a normative influence on U.S. culture far beyond any direct impact on enlisted men and women.

With climate change, the military's influence over both technological innovation and cultural values are coalescing around a single problem for the first time in history. That influence could have environmental impacts that reach far beyond any particular solar installation or Department of Defense report.

Permission Granted

In 2007, the board of the government-funded military research organization Corporation Military Advisory (CMA) tied climate change and national security together for the first time. It would be another three years before the military would officially embrace the term "climate change," in the 2010 Department of Defense Quadrennial Review. The 2014 Quadrennial Defense Review, released in February 2014, is explicit in its reference to climate change as a clear and looming threat to national security, drawing attention to the potential for catastrophe both domestically and abroad.

"The impacts of climate change may increase the frequency, scale, and complexity of future missions, including defense support to civil authorities, while at the same time undermining the capacity of our domestic installations to support training activities," reads one section of the report. "Our actions to increase energy and water security, including investments in energy efficiency, new technologies, and renewable energy sources, will increase the resiliency of our installations and help mitigate these effects."

Another section refers to climate change as a “significant challenge” for both the United States and the world at large. “As greenhouse gas emissions increase, sea levels are rising, average global temperatures are increasing, and severe weather patterns are accelerating,” it reads. “These changes, coupled with other global dynamics, including growing, urbanizing, more affluent populations, and substantial economic growth in India, China, Brazil, and other nations, will devastate homes, land, and infrastructure.”

Did the U.S. military just equate rising greenhouse gas emissions with catastrophic weather events and increasing global conflicts? Yeah, it did.

Part of a collaborative project on soldier power, between West Point and the U.S. Army Natick Soldier Research arm, this energy harvester is designed as a boot attachment and converts negative energy into electrical power. When walking, negative energy in the ankle is created during a normal human gait from heel strike to midstance. That energy can be harvested and used to power batteries in the field.

Walking the Talk

Even before it began openly using “the c word,” the U.S. military was investing heavily in fuel- and water-efficient technologies. Not because it loves the environment, but because the pursuit of such technologies is directly in keeping with both the military’s mission — to protect the nation and its troops — and the government’s desire to save money.

With 2.3 billion square feet of built space and 28 million acres of land under its control in the United States alone, the Department of Defense (DoD) has a physical footprint that is more than twice the size of Walmart’s global footprint (three times the supercenters’ U.S. footprint). It’s also the nation’s single largest consumer of energy, with energy costs in 2012 (the most recent year for whichthis stat is available) totaling $20.4 billion, about 4 percent of a DoD budget that includes funding for active conflicts abroad. That more than makes the case for domestic efforts to curtail energy, which include everything from the launch ofnet-zero base initiatives — aimed at dramatically reducing waste, energy, and water use throughout the armed forces — to

a massive uptick in the purchase of solar panels and signing of power purchase agreements.

Along the way, the DoD began incentivizing cleantech research and development in the private sector, testing new technologies and services, and driving down the cost of renewable energy for the entire country. “The DoD is positioned to become the single most important driver of the cleantech revolution in the United States,” said Pike Research president Clint Wheelock. “In particular, military investment in renewable energy and related technologies can help bridge the ‘valley of death’ that lies between research & development and full commercialization of these technologies.”

Army personnel tested various cleantech products at the annual Rim of the Pacific Exercise (RIMPAC), July 2014. Shown above: Sgt. Roy Gano, a Kapolei, Hawaii, native and carpenter/masonry technician with the 871st Engineer Company, 9th Mission Support Command, along with other Soldiers and other support elements, becket lace the solar shade canopy together

SolarStrong — a partnership between solar power provider SolarCity and the DoD — for example, will eventually provide solar power to more than 100,000 military homes, making it the largest residential solar installment in the country. In addition to formulating new public-private financing tools (including debt financing from Bank of America Merrill Lynch), once completed, the SolarStrong military base installations will just about double the amount of installed rooftop photovoltaics in the country, driving down the cost of solar for all.

In the past three years the DoD also has deployed dozens of new types of batteries and other energy storage systems, as well as various energy-saving building materials. Of course the military isn't some sort of cleantech Panacea. Budget and personnel movements are major obstacles to success for energy efficiency and net-zero initiatives throughout the various military branches. When Major General Dana Pittard took over command of U.S. Army base Fort Bliss in 2010, for example, he implemented a strong vision for net zero energy, water, and wasteacross the base. When Pittard was tapped to lead U.S. forces in Iraq, however, and budgets for Fort Bliss were cut, that

vision stalled out. Still, other bases have picked up where Fort Bliss left off. Nearby Fort Hood has made big strides toward its net-zero waste goal, and Fort Carson, in Colorado, stands as a real model of net-zero development, helped in part by support from the nearby National Renewable Energy Lab (NREL).

Lives Saved Divided by Gallons Wasted

But what really drives energy independence home for the military is its link to conflicts around the world. In a 2011 report to Congress entitled "Energy for the Warfighter: Operational Energy Strategy," the Department of Defense noted that from fiscal year 2003 to fiscal year 2007 in Iraq and Afghanistan, more than 3,000 Army personnel and Army contractors were wounded or killed in action as a result of attacks on fuel and water resupply convoys. In 2012, Colonel Peter Newell was heading up the Army's Rapid Equipping Force (REF), — a branch of the Army tasked with very quickly solving problems soldiers were experiencing while "in theater." He told me his team's effort to reduce energy needs was "not about reducing energy usage and the overall bills, but about saving lives," although he noted that it was fortunate that the REF's needs at the tactical edge

coincided with the Department of Defense's desire to embrace sustainability and reduce energy consumption.

"Any reduction in the use of fossil fuels and you're lowering the risk of casualties," said Jon Gensler, a former Army officer and Iraq war vet, now a project developer with Borrego Solar, working on solar installations at various Army bases. "You're saving American lives and you're also allowing thousands of soldiers to be repurposed to something that's not driving a fuel truck. So there are operational efficiencies there, too."

Deeper even than the connection between lives lost on refueling missions and the need to reduce energy needs is the link between resource constraints and war, writ large. "I have to say, as a precursor to conflict, lack of access to basic resources is a major driver and it's only getting worse," said Newell, who's now retired from the Army and running BMNT Partners, a consulting firm that brings academics, startups, and government personnel together to solve big problems for the Department of Energy and Department of Defense.

Newell explained that when he was responsible for troops in Southern Iraq, on the border with Iran, he watched tribes going to war time and again over water rights. “Access to clean water is viewed as a human right, and yet large chunks of the global population do not have it,” he said. “And it’s becoming worse as people migrate to urban coastal centers and those areas’ abilities to provide services are overwhelmed.”

“There are a lot of places in the world where you could put a pin down and say here are horribly managed water and agricultural policies, and you could look at the stress on the systems there, and by and large those places map to some of the most violent spots on earth.”

A War of the Minds

That connection between lives lost on the battlefield and energy saved at home feeds into what may be the military’s most important power: The ability to shift beliefs around climate change. There’s mounting evidence that the military’s increasing willingness to validate climate science and speak openly about the need to address climate change could have a greater impact

on the public's willingness to act than almost any other communications effort.

Sarah Light, an assistant professor at University of Pennsylvania's Wharton School of Business, has been working with a team of colleagues to study the impact of the military's commitment to tackling climate change on the attitudes and behavior of the general public. "People are significantly more likely to say that they would purchase renewable energy from their utility when exposed to the knowledge that the military has installed solar on its bases then when they are unaware of that fact," she said.

The Pentagon hosted an Energy and Sustainability Technology Fair in late 2011 to showcase cleantech products the various branches of the military had been testing and deploying, including this Solar Hybrid Expeditionary Purification System. The system comes in two 80-lb footlocker-sized boxes and can be powered by solar panels or batteries. It can produce 450 gallons of freshwater per day from tainted freshwater, brackish water, or seawater sources.

In a recent article for the *UCLA Law Review*, Light wrote that the military's willingness to validate climate science, coupled with the value it has placed on the national security benefits delivered by energy efficiency and a transition to renewable energy "have the potential to affect the attitudes of individuals who, because of their existing values or political ideologies, would not otherwise believe in the existence of a scientific consensus about climate change, the urgency of climate change policies, or the need to modify behavior to address climate change."

Light and her Wharton colleagues are in the process of conducting further surveys and research to determine whether or

not that potential is being realized. But while it's heady stuff to think the military's green strategy might just get everyone united around climate change, there are no guarantees of such an outcome.

Renee Lertzman, a psychologist and communications consultant who co-founded the Climate Psychology Alliance said that climate denial is not likely to go away just because people are presented with some new data from a different source. "Human denial is a powerful force — people are more than capable of denying facts that stare them right in the face, especially if they conflict with other beliefs they hold dear, like being anti-regulation, for example."

Nonetheless, she sees the potential for some important lessons in the military example. "At its most fundamental level, the issue of climate change is really about what it means to be a human on this planet," she said. "And that gets completely wrapped up in people's notions of what it means not just to be a person, but to be a good person. The military operates completely outside of that — for them, dealing with climate change is not a matter of

being good or not, it's about getting done what needs to be done, and about maintaining power and a strategic advantage."

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