

Green zone

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The U.S. military spent more than \$15.2 billion on energy last year, making the Department of Defense one of the largest, biggest-spending consumers of fuel and electricity in the country, if not the world. It makes sense, then, that the two previous presidential administrations, Republican and Democrat, have tasked the Pentagon with a new mission: reduce energy use, seek cleaner alternatives, conserve water, curb wastes, construct energy-efficient buildings.

In short: Go green, soldiers, sailors, airmen and Marines. And do so now.

The evidence of this environmental shift can be seen at every defense facility in military-rich Hampton Roads - temperature-controlled Air Force barracks in Hampton, rain gardens protecting the Chesapeake Bay at Norfolk Naval Station, a wind turbine powering a special-ops training post in Virginia Beach, electric vehicles scurrying about a Coast Guard yard in Portsmouth.

Greening the military is proving expensive. Under the federal stimulus package recommended by President Barack Obama and approved by Congress in 2009, about \$7.4 billion was set aside for base construction, energy conservation and clean technologies with military applications, according to Pentagon figures.

While the investments are steep, they are intended to save money in the long run, through lower utility bills and home-grown alternatives less susceptible to global whims.

"We're a military who's figured out how to stuff a nuclear reactor inside a submarine," Secretary of the Navy Ray Mabus said last fall at a Pentagon energy-security forum. "We figured out how to shoot down ballistic missiles in flight. We can do energy."

Mabus and other top officials might sound like born-again environmentalists, but they mostly argue strategic points. They note how a continuing reliance on fossil fuels means doing business with unsavory governments, including some that fund Islamic extremists. Protecting foreign oil stores and their rulers, these officials stress, put American service members at risk and, in some cases, in harm's way.

"We're not going green for green's sake," Mabus said in his speech. "Energy reform and the new energy future aren't about politics or slogans. It's about protecting the lives of our troops. It's about making our military better and more capable fighters. It's about making our country more secure and more independent. That's why we're doing this."

The change in philosophy is not devoid of irony. It was the Pentagon, after all, that designed the fuel-guzzling Humvee, the model of energy inefficiency.

Furthermore, the national roster of Superfund cleanup sites includes no fewer than a dozen military facilities in Hampton Roads, which today are spending millions of dollars to purge toxic pollutants dumped years ago into wetlands, landfills and waterways, often before environmental laws were enacted to curb such behavior.

The Pentagon in recent years has become a solid advocate for action against climate change and sea-level rise, funding research and advancing projects intended to reduce the vulnerabilities of its bases in flood-prone areas, including Norfolk and Virginia Beach. As with fossil fuels, Pentagon brass view the slow warming of the planet less through activist lenses and more through common-sense glasses.

They wonder, for example, about the consequences of a future with newly opened seas and ports in the Arctic Ocean where ice once blocked ships from passing.

They envision conflicts over limited food and water resources, driven by shifting drought and agricultural zones. And they worry how radical Islamic groups might manipulate these climate-affected tinderboxes to their own strategic advantage, such as in the current crisis in Somalia.

Global warming "is a strategic challenge, and it's incredibly important we get it right," Rear Adm. David Titley, the Navy's chief oceanographer, said in December at a symposium on sea-level rise at Old Dominion University in Norfolk.

Through executive orders and congressional mandates, the new environmental ethic has been jammed into action. The first ones were signed in 2003, 2005 and 2007 by President George W. Bush, not exactly a favored son of most environmental groups.

Bush, like his Pentagon leaders, saw the issue more in terms of energy independence, of shoring up weak links in national defense and limiting exposure to potential enemies in the future, he has said in speeches.

Some of these early mandates affecting all federal facilities, military and civilian, included goals such as reducing energy consumption by 3 percent a year or 30 percent by 2015, trimming water consumption by 2 percent annually, and requiring all new construction projects and major renovations to cut fossil-fuel usage by 55 percent, beginning in fiscal year 2010.

Obama has added to the plate, demanding that facilities reduce their greenhouse gases, pursue renewable energy projects "to the extent feasible," and track and report their progress, or regression, for each prescribed goal.

The environmental shift, pushed by billions of dollars in government contracts, has created a green momentum in the private sector, especially among engineers, environmental consultants, builders and architects, all looking for a piece of the pie.

"You get with the program or you're out," said Randy Boe, a federal contract manager for Damuth Trane, a private energy-management firm that helped build a huge geothermal heating-and-cooling system at Dam Neck Annex to Oceana Naval Air Station in Virginia Beach.

The government mandates, Boe said, "helped push this to the forefront, no doubt. Trane saw it coming - a lot of firms saw it coming - and we see it as a good, necessary thing. It's where the world is heading."

This gradual conversion of a fossil-fuel-based economy to one predicated on clean technologies and green jobs is a stated, desired ripple effect of the federal initiatives.

"They will spin out of the military and go into wide civilian use," retired Vice Adm. Dennis V. McGinn said in releasing a report in 2009 titled "Powering America's Defense," a blueprint for alternative energy strategies.

McGinn and a handful of other retired brass helped to issue reports and held news conferences seemingly every week back then, extolling the need to cure America's addiction to foreign oil with domestic innovation and environmental awareness.

Former U.S. Sen. John Warner, a Virginia Republican with long ties to the military, was part of that public relations campaign. He also encouraged Congress to tackle climate change, if only to help the nation's defense.

So far, though, Congress has done little on the climate front, though it has given generously to green construction and research - to the tune of about \$10 billion a year, said Lt. Col. Melinda Morgan, a Pentagon spokeswoman.

Not surprisingly, the economic ripple has been felt in Hampton Roads. Most local bases today have "energy managers" or "sustainability officers" on staff, and the Navy has its own green design and architecture division, headquartered in Norfolk.

The private sector has taken advantage, too. Engineering and architecture firms, contractors and material providers have been recruiting and hiring specialists in green construction in recent years, as well as those certified in the green building code known as Leadership in Energy and Environmental Design, or LEED.

Almost all new federal buildings and most renovation jobs must qualify as LEED projects. Typically, they will include low-flow toilets, energy-efficient lighting, controlled heating and cooling, chemical-free paints, and recycled carpeting and office furniture.

Recent visits to local bases showed construction activity almost everywhere, contractors waiting to clear security gates, and recycling bins set aside for rubble, concrete and other wastes.

Earlier this year, environmentally savvy firms crowded into the Virginia Beach Convention Center - itself a LEED-certified building - for the third annual "Green in the Military" conference.

The event, the brainchild of the Hampton Roads Green Building Council, sold out of sponsorships, even with fees as high as \$1,250. For that price, company officials staffed a small booth, where they passed out brochures and business cards and courted legions of government engineers and public works officials.

Workshops on subjects ranging from "construction and demolition waste" to "stormwater management and low impact development" took place all day. Speakers from the Navy, Army, Air Force and Coast Guard described millions of dollars worth of completed environmental projects as well as those still to come.

Air Force Col. Dimasalang Junio started his keynote address at lunch with a joke: How many people does it take to screw in a light bulb?

"101," he answered with a grin, "one to screw it in, and 100 to figure out what 'sustainability' is and to certify it as such."

The crowd politely chuckled.

Then he got serious.

Junio described a "paradigm shift" in military construction, ticking off a list of green projects in 12 states, including Virginia, that the Air Force has finished or is pursuing, some 8,500 buildings that are being renovated or assessed for environmental upgrade.

"It is a new day," the colonel said.

Is it all working, though? Is it worth so much money, especially in a time of economic recession and foreign wars?

The Pentagon says it reduced its energy use by 11.2 percent from 2005 to 2010, compared with the goal of 15 percent. Its energy costs increased last year by about \$1.8 billion, though a spokeswoman attributed this to higher fuel prices - proof, she said, of why the conservation initiatives are needed.

Other key factors in the military not meeting its energy-reduction targets, the Pentagon says, have been the demands of moving equipment and troops around two combat theaters in Iraq and Afghanistan - three, if Libya is counted - and completing base closures.

"As the Army closes some facilities and moves to others, the lights are on in two locations," said Morgan, the Pentagon spokeswoman.

Still, she said, significant gains are being made. As part of its Energy Conservation Investment Program, which consists mainly of retrofitting buildings with green technologies such as modern insulation, efficiency lighting and furnace upgrades, the Pentagon has saved \$2.16 for every \$1 spent from 2003 to 2009, Morgan said.

Standing atop a new green roof recently at the Naval Legal Service Office, one of hundreds of old buildings within Norfolk Naval Station, Julie Kephart-Jones was asked if she can envision a day when such vegetated roofs will adorn the entire base.

Kephart-Jones, an architect and sustainable-program manager for the Navy, sighed and considered the acres of work ahead.

"We're doing as much as we can," she finally said. "We know they work, we know they save money, reduce runoff and extend the life of the roof. But, well, we're doing what's possible with what we have. It's a long process, as you can see."

Coming tomorrow: Navy project makes wastewater cool.

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