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THE GREENING OF THE GUARD

How the Guard is meeting and beating DoD sustainment goals

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THE GREENING OF THE GUARD

AT MILITARY INSTALLATIONS NATIONWIDE,
THE NATIONAL GUARD IS CONSERVING ENERGY,
STEWARDED RESOURCES AND REDUCING WASTE.
THE RESULT: A CLEANER ENVIRONMENT, HEALTHIER
GUARDSMEN AND A MORE EFFECTIVE GUARD.

BY MATT ALDERTON



Make no mistake: Eastern Kentucky is coal country.

Nestled on the Cumberland Plateau on the western edge of the Appalachian Mountains, it's known for its ubiquitous mines, which in the last 200 years have produced more than 5.78 billion tons of coal, according to the Kentucky Geological Survey. As such, it's the last place you'd expect to see solar panels. And yet, that's exactly what you'll find at the Kentucky National Guard's Harold T. Disney Training Center in Artemus, Ky.

Established in 1979, the training center recently became the Kentucky Guard's first "net-zero" energy site—a

site that produces as much energy on site as it consumes—thanks to 851 solar panels that generate over 200,000 kilowatt hours of renewable energy every year. Along with other efforts, including an ongoing energy audit that helps it maximize energy efficiency at its facilities, those solar panels have made Kentucky first in the entire National Guard in energy reduction, and third in energy production, according to the National Guard Bureau.

"This is a beautiful location, a place soldiers have been coming to get their training since 1979," Sgt. 1st Class Chaz Martin told the Kentucky National Guard Public Affairs Office in summer 2012. "Now that we are net-zero, we're making that much bigger of an impact on the Kentucky Guard."

The Kentucky Guard isn't alone in its efforts. In fact, it's representative of a larger culture of sustainability that is taking root across the entire Guard.

"We're not only protecting our nation from foreign enemies, we're also protecting our environment and our resources," says Lt. Col. Mike Speth, special assistant to the G-4 for sustainability and energy at the Army National Guard Directorate.

MISSION: SUSTAINABILITY

Long before "green" evolved from color to cause, *efficiency* was the National Guard's credo.

"We've been doing sustainability in the Army National Guard for quite a while, even though we didn't call it that," explains Speth, who says the Guard's official sustainability efforts date back more than a decade. "We've been working on sustainability in one form or another through environmental channels since 2000, when the Army developed its triple bottom line: environment, mission and community."

In pursuit of its triple bottom line, the Army has established the following six goals:

- **Foster a sustainability ethic:** Foster an ethic within the Army that takes us beyond environmental compliance to sustainability.
- **Strengthen Army operations:** Strengthen Army operational capability by reducing our environmental footprint through more sustainable practices.
- **Meet test, training and mission requirements:** Meet current and future training, testing and other mission requirements by sustaining land, air and water resources.

FALL POWER

The new 180th Fight Wing (FW), Ohio Air National Guard, solar field located in Swanton, Ohio, was completed in October 2010. It is part of the 180th FW's Renewable Energy Project funded by the Department of Defense Research and Development Program in an effort to reduce the use of limited fossil fuel sources and dependence on foreign energy sources. The solar field produces 800-900 kilowatts of electricity, allowing the 180th to save approximately 37 percent on its annual electricity budget, reduce the amount of coal burned to almost 250 tons annually and at the same time, reduce harmful emissions and greenhouse gasses.

Photo by MSgt Beth Holliker



NET ZERO

Pictured is an aerial view of solar panels installed on the buildings of the Harold L. Disney Training Center in Artemus, Ky., June 7, 2012. The solar panel installation has effectively reduced the site's energy usage to net-zero, meaning the site produces more energy than it uses.

Photo by Sgt. Scott Raymond, 133rd Mobile Public Affairs Detachment

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■ **Minimize impacts and total ownership costs:** Minimize impacts and total ownership costs of Army systems, material, facilities and operations by integrating the principles and practices of sustainability.

■ **Enhance well-being:** Enhance the well-being of our soldiers, civilians, families, neighbors and communities through leadership in sustainability.

■ **Drive innovation:** Use innovative technology and the principles of sustainability to meet user needs and anticipate future Army challenges.

“What initially was an environmental activity has morphed over time,” Speth says. “More and more disciplines—facilities, installation management, logistics—are taking responsibility for sustainability. We’re even getting trainers involved now because they see the benefits of having sustainable training

ranges and using sustainable practices to keep our soldiers prepared.”

Driving sustainability within the Guard today are the Energy Policy Act of 2005 and the Energy Independence and Security Act of 2007, as well as Executive Orders 13423 and 13514—all of which establish various energy and environmental management requirements for federal facilities and fleets.

“[Those policies] mandate facility, energy and water reductions, mainly through renewable energy goals and sustainable design,” explains Chief Warrant Officer 3 Christopher Swihart, utilities, operations and maintenance technician for the Army National Guard’s Installations Division.

As outlined in the Department of Defense’s Strategic Sustainability Performance Plan (SSPP), the National Guard’s specific sustainability targets include:

- 3 percent annual reduction in building energy intensity through 2020, or 37.5 percent total reduction by 2020;
- 18.3 percent of energy consumed by facilities is produced or procured from renewable sources by 2020;
- Potable water consumption intensity by facilities reduced by 26 percent of 2007 levels by 2020;
- Industrial and irrigation water consumption reduced by 20 percent of 2010 levels by 2020;
- 50 percent of non-hazardous solid waste diverted from the waste stream by 2015 and thereafter through 2020; and
- 60 percent of construction and demolition debris diverted from the waste stream by 2015, and thereafter through 2020.

When these goals are achieved, the benefits will be financial as well as environmental. “By controlling

GREEN-DESIGN MAINTENANCE SHOP

In addition to supporting the hazardous and waste materials management for its units in five counties, the field maintenance shop services and supports over 600 pieces of rolling stock, which represents 75 percent of all the North Carolina Army National Guard units’ equipment. Over 500 pieces come through this facility every year for servicing and rehabilitation. The North Carolina Army National Guard won the fiscal year 2008 Secretary of the Army Environmental Award for pollution prevention (team).

U.S. Army Photo courtesy
N.C. National Guard.



consumption, you can better manage your overall budget,” Swihart says. “The more efficient we make our buildings, the less of a burden it will be on the programs that fund facility operations.”

STATES OF SUCCESS

Although the National Guard has promoted sustainability at the national level, progress is owed to individual states and installations. “In the Army National Guard inventory we have about 26,000 buildings spread over 3,000 different locations,” Swihart says. “To manage that in an efficient manner you have to look at every state and every facility differently.”

Along with Kentucky, model states include:

Michigan: In partnership with the state, the Michigan National Guard is turning Camp Grayling into a net-zero energy, water and waste installation. As part of that effort, it’s embracing renewable energy sources as varied as wind, geothermal, fuel cell technology, solar and biomass gasification. The Michigan Department of Military & Veteran Affairs cites Camp Grayling’s onsite recycling facility as another highlight, along with efforts at Fort Custer, where the Michigan Guard has made natural resources conservation a major priority.

North Carolina: The North Carolina National Guard’s “Environmental Policy Statement” states that environmental sustainability is “vital to [North Carolina National Guard] readiness and mission accomplishment.” Projects of note have included a new Tactical Unmanned Aerial System (TUAS) support facility at Fort Bragg—a building certified by Leadership in Energy and Environmental Design (LEED) that includes a geothermal heating/cooling system, solar panels and a rainwater-harvesting system—and a green-design maintenance shop at the North Carolina National Guard Armory in Lenoir, N.C., where the North Carolina Guard’s Pollution Prevention (P2) Team enjoys geothermal heating and cooling, occupancy sensor lighting systems and tankless water heaters.

Oregon: The Oregon National Guard has made net-zero energy and water a principal goal. To achieve it, it’s established federal, state and private partnerships that will fund a variety of renewable energy projects, including the state’s largest solar array in Christmas Valley, Ore. Other achievements include \$7 million in water improvement projects at Camp Rilea Maneuver Training Center and the construction

GREEN GUARDSMEN

Renewable energy and LEED-certified new construction have vast potential. When it comes to improving environmental stewardship, however, the Guard’s greatest opportunity is also its greatest asset: enlisted Guardsmen.

“We can do things like solar daylighting, but if we still leave the doors open and the lights on, that’s not being very efficient,” Swihart says. “So, the soldiers and leaders in our facilities have to be more conscientious about what they’re doing to conserve energy and water.”

To that end, the National Guard is planning an education campaign that will help individual soldiers understand their environmental impact. “We’re going to turn all of our soldiers and civilians from energy consumers into energy stewards,” Speth says.

Increasing environmental awareness alone can reduce the Guard’s energy consumption between 10 and 30 percent, according to Swihart. “The greatest impact you can have on a conservation program is awareness,” he says.

Their increased awareness will directly benefit soldiers; because they often encompass indoor air quality and environmentally-preferred purchasing, installations’ sustainability efforts promise to improve occupational health and safety, not to mention enhance mission capabilities by way of conserving the Guard’s training sites and maximizing its financial resources.

All of this will also help attract a new generation of Guardsmen. “As our force becomes younger, they’ve grown up with an [environmental] ethic,” Speth says. “They expect to work for an employer that has a high regard for its employees and the environment.”

This high regard is already having deep impact. “The folks who run installations—the energy managers, facility construction and repair people—are doing great things that we can call sustainable practices, and they’re doing them because they make sense,” Speth concludes. “They’re more effective and they save money in the long run. They’re just smarter ways of doing business. ■



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of six LEED-certified facilities since 2004, all of which exceed building code energy efficiency requirements by an average of 40 percent, according to a 2011 report from the Association of the United States Army.

“States are setting their own goals through environmental quality control councils and using environmental management systems,” Speth says. “Some of those states are really far ahead in terms of planning, development and implementation of sustainable practices.”